

PBO Practical
Boat Owner®

BRITAIN'S BEST-SELLING BOATING MAGAZINE
No. 593 NOVEMBER 2015

MAINTENANCE · PROJECTS · GEAR REVIEWS · SEAMANSHIP · CRUISING

RESEALING WINDOWS

How to keep your boat windows leak-free

TESTED

MOB LADDERS

Simple – but are they effective?

PADLOCKS

Strength versus durability

**WIN
A BOAT!**
See page 9



**Get afloat for less:
the £400 Pandora**



**Make a boat tent
from a polytunnel**



**Solar panels: small
space, maximum area**

**PLUS Diesel polishing:
how to get the bugs out**

THE MAGIC 30 FEET

Peter Poland's pick of UK-built best-selling boats from 28-30ft

HOW TO USE TRIM TABS

Reduce drag and gain control



**Pilotage
tips and
techniques**



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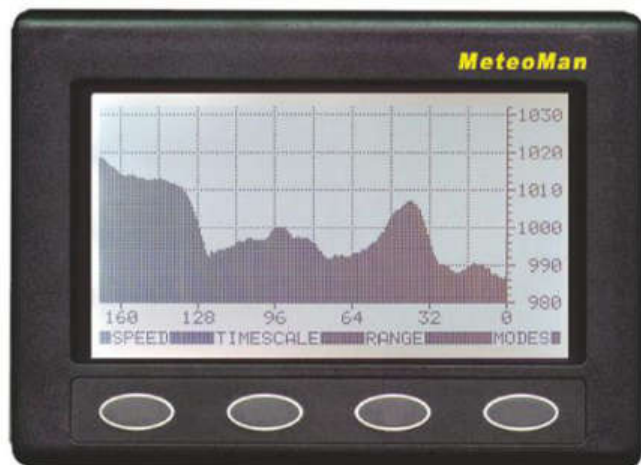
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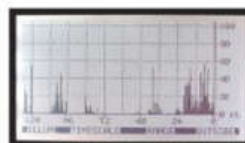
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CONTACT PBO EDITORIAL

By email: pbo@timeinc.com

Via our website: www.pbo.co.uk

By post: PBO, Time Inc. (UK) Ltd, Westover House,
West Quay Road, Poole, Dorset BH15 1JG

By phone tel: +44 (0)1202 440820

By Fax: +44 (0)1202 440860

Editor
Editor's PA
Deputy Editor
Art Editor
Production Editor
News Editor
Contributing Editor
Technical Illustrator
Charts and maps
Publishing Director

David Pugh
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Waiting for the tide



with the editor

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Crying foul over DIY antifouling?

On the day this edition of PBO arrives on your doormat, on your screen or in your newsagent, Ben Meakins and I will be part-way through our round-Britain journey to collect the results of our antifouling test. Comprising 26 boards in 13 locations, this season-long enterprise will compare the performance of 20 different eroding paints, giving a unique level of detail into how different paints perform in different areas. We'll be publishing the results in our January edition, so make sure you don't miss it!

However, although our test should stand you in good stead for choosing your antifouling paint in the short term, the next time we carry out such a test the range of products available may be very different. Antifouling manufacturers have long been struggling with the increasingly

I prefer to have a choice of how I poison myself

stringent demands of the Biocidal Product Directive (BPD) enforced by the EU, which requires each biocide and combination of biocides to be separately approved. In theory, even the seadog's approach of tipping a generous dollop of chilli powder into your paint renders it a new product, subject to further analysis and approval or, failing that, prosecution.

Approval itself is not a straight yes or no. Different rulings are made for professional and DIY application, and making the transition from one to the other can be challenging. For example, International's water-based Micron WA antifouling, which I first tested on my boat during the 2012 season, has still to be approved for DIY application.

Recent news from the British Coatings Federation (BCF) suggests that this one example may be an indication of a wider trend in legislation. Until now most of us, myself included, have assumed that tighter controls on biocides have been in

the interests of marine life. Although it's frustrating to think that one might have to put up with increased fouling, the odd mid-season scrub is a worthwhile price to pay to preserve our marine environment. However, the latest review of biocides is expected to have a stronger focus on the dangers of application, with the possible result that formulating and supplying antifouling paint for DIY application may become all but impossible.

Saving our environment is one thing, but I, for one, prefer to have a choice of how I poison myself. Alcohol, tobacco and car fumes are still legal and, however sensible it may be, I'm not obliged to don gloves and a facemask to open a bottle of bleach or unscrew the top of a battery. Equally, I'm permitted to go to sea with no qualifications, which some may regard as inadvisable until you consider

the hordes of people who cross roads with no paperwork to confirm their ability to do so. What all these activities have in common is that they rely on a modicum of that innate intelligence which has so far preserved our race, known as common sense.

So, when you get to the stage of rubbing down and renewing your antifouling for 2016, wear overalls, gloves and a mask to preserve your health and ensure that you are not using NHS resources to treat bizarre biocide-induced ailments, and to demonstrate to any passing bureaucrats that practical boat owners are not idiots. And, before the closing date of 30 November, please fill in the BCF's online survey on DIY application to furnish evidence that the way boat owners use antifouling products is both safe and sensible. You'll find the link on p6, together with some industry opinions on the potential legislation.

I hope you enjoy this issue of PBO.

Fair winds,

David Pugh

PBO is also available on these digital platforms





The future of DIY antifouling: it's apparently in your gloves

Antifouling paint product regulations set to change significantly over the next few years

Regulations that pass or fail DIY antifouling paint products for the European market will be changing significantly over the next three to five years.

The established view that boat owners can use antifouling paints in a responsible way, following the label instructions and wearing appropriate protective clothing – such as gloves – is being challenged, and manufacturers need evidence to support this position. The implications for boat owners are significant, with potential restrictions of antifoulings to professional use only and revised products for the DIY sector which have limited product performance or life time. This will increase costs to the boat owner and potentially threaten UK waters with an increase in the translocation of invasive species due to a lack of effective fouling control.

Gareth Prowse, UK regulatory affairs manager, with responsibility for AkzoNobel's brand International Paint, said: 'it could mean that tried-and-tested biocide antifouling products are not re-registered. We're coming to the point where each of the active ingredients we use will or will not be approved for use in our products.'

Duty of care

Gareth continued: 'Over the years, we've seen an increasingly conservative approach to risk assessments where there is uncertainty of data about the actual impact on the environment or individuals using the product. This is a very sensible approach: paint manufacturers and regulators alike have a duty of care to protect those that use antifouling paints and the environment, but recently it's becoming so conservative that the assumptions within the risk



Neglect to apply antifouling and this is the inevitable result

assessment may not reflect actual practice. For example, it's expected that individuals will not take care of themselves. We believe that antifouling paints have been used safely and effectively by experienced boat owners for many years.'

Gareth said the battle to show that regulators can trust DIY users has 'to some extent already been lost' as this is 'opinion, not fact'. He added: 'Now the presumption is that people don't wear gloves or protective clothing. For us to pass the recommended EU risk assessments, we have to either scale back the active ingredients, which will affect the product's performance, or provide proof of careful use.'

Gareth, who is also chairman of the British Coatings Federation (BCF) Marine Coatings Group, said: 'The BCF are trying to generate data to better understand how people use these products and what protective equipment they do use when painting.' The online 'DIY Use of Antifouling Paints in the UK' survey will run until 30 November 2015 at

www.surveymonkey.com/r/NPNB6NW. Responses will form the basis for a report from the BCF, providing an overall picture of the DIY application of AF paints in the UK. This will then be used as a basis for determining what further support activity is required.

Gareth added: 'Our concern is that we could end up withdrawing products that can be and are used safely because of the risk assessment being too conservative due to a lack of data, rather than genuine risk.'

International Paint is expecting the final biocides to be approved at the end of this year or early next year. The new product regulations will come in over the next three to five years.

Royal Yachting Association cruising manager Stuart Carruthers said: 'Member states are currently conducting a review of the biocides that are covered by the Biocides Regulation of 2012. We acknowledge that it is important to keep the list of regulated biocides under review, but we would be concerned should the review result in any

proposal to ban the use of, or weaken, antifouling paint on recreational craft, which could undermine efforts to combat the threat of invasive non-native species.'

'Totally different'

David Ashley, director of Nanotech SST, believes recent developments with nanoscience will solve the problems with antifouling: 'We've been involved in a four-year trial with a completely new type of antifouling. It's totally environmentally friendly and essentially silicone based, and it works in a completely different way from conventional antifouling. The growth is just unable to adhere to the surface. It's easy to apply – it can go on hard antifouling gelcoat and there's a trial under way in New Zealand to see how it works on aluminium boats.'

It is primarily designed for powerboats as sailboats may be unable to accomplish the speed required for the water flow to clear the debris. A trial involving a Swordsman 37 powerboat in Port Solent is still working well after three years and seven months.

Nanotech Antifouling's debut at the Southampton Boat Show received a 'good response' although David acknowledged 'it's a bit pricey right now' at around £500 a litre – but a litre is promised to go a long way. He said: 'You need between 30g and 50g per square metre. A litre would do somewhere around a 30ft boat.'

Once the product can be produced in greater volume it will bring the price down.

David added: 'I believe that in the States this year, copper antifouling is going to be banned. We're among the many companies that have been searching for a solution.'

Visitor numbers down but sales up at the 2015 Southampton Boat Show

More than 110,000 people flocked to Britain's biggest boating festival – less than last year's footfall of more than 112,000 people across 10 days, although exhibitors reported increased sales.

Many companies reported an increase on last year's figures at the 2015 Southampton Boat Show, including multi-million pound deals. Some serious marine business was conducted, with contracts between the marine divisions of companies such as Rolls-Royce and Sunseeker International being signed. A total of 23 boats made their world debut and more than 330 sailboats and powerboats were exhibited at the purpose-built marina. The Red Arrows provided visitors with a show-stopping display on the first weekend, and celebrity guests included Sir Robin Knox-Johnston, Olympian Annie Lush and F1 presenter Suzi Perry.

Murray Ellis, managing director of British Marine Boat Shows, said: 'Our attractions have been very popular this year with over 18,000



The Red Arrows' show-stopping display at the 2015 Southampton Boat Show

visits to our tall ship, the *Earl of Pembroke*, 5,300 rides on the Honda Boat Show Eye and over 27,000 visitors to the show's very own aquarium.'

The PBO Project Boat *Hantu Biru* was one of the show feature boats, with visitors lining up to enter a prize draw competition to win the fully-restored Snapdragon 23

yacht. Jean Louis Caillerie travelled to Southampton from Brittany just to see the PBO Project Boat. He said: 'I came across the Channel just to see her. I think it's the last time to see the boat as a free boat, owned by the magazine. I think it was a very good project.'

You can still enter the competition at www.pbo.co.uk/winbantubiru.

Second annual Bart's Bash

Thousands of people took to the water in boats of all designs to take part in Bart's Bash, the global sailing event in aid of the Andrew Simpson Sailing Foundation (ASSF).

The second annual Bart's Bash on 20 September saw sailors of all abilities joining big-name stars including Iain Percy, Tom Slingsby, Sir Ben Ainslie and Freddie Loof, who all took part in the inaugural event in 2014. Bart's Bash was

conceived as a participation event in memory of Andrew 'Bart' Simpson. It officially became the largest sailing race in the world, raising more than £360,000 for the ASSF, which aims to use sailing to transform the lives of young people globally. This year, 12,336 participants have so far taken part in the event at 470 venues in 62 countries, raising £60,435 (and counting) for the charity.

■ www.bartsbash.com



Freddie Simpson, with Olympians Iain Percy and Anthony Nossiter, having completed his second Bart's Bash at his father's sailing centre

Storm-struck Dominica appeal

The Dominica Marine Association is appealing for help from the yachting community following a storm that killed at least 11 people and caused widespread devastation.

Tropical storm Erika struck Dominica in the Caribbean on 27 August. Hubert Winston, president of the Dominica Marine Association, said the storm caused 'widespread catastrophic damage and death'.

Sailors interested in bringing in supplies such as nappies, baby formula, baby bottles, bottled water, non-perishable food, dry food, school supplies, battery-operated lamps, batteries, personal hygiene goods etc should notify the Dominica Marine Association before entering port (Roseau or Portsmouth) so all customs duties can be waived once you arrive. Monetary donations can be made to: www.youcaring.com/the-people-directly-affected-by-tropical-storm-erika-423803.

Greece and Turkey: the Migrant Situation

Noonsite.com has published some useful advice from the RCC Pilotage Foundation to cruisers sailing in the waters between Greece and Turkey.

There are roughly 2.5 million refugees from Syria in Turkey, and many of these have travelled to the Aegean coast hoping to be able to cross to Greece and then to Europe. The Area Commander of the Turkish Coastguard says: 'Attempts to exit Turkey and enter Greece without going through the proper channels is an illegal activity. If any vessel takes on board any such person then that vessel is itself acting illegally. Great care is therefore needed by any vessel which is in the vicinity of vessels which may have migrants aboard. There is nightly traffic of migrants trying to get to Greece from Turkey.'

There is a greatly increased level of activity by the Turkish Coastguard and the Turkish Navy in the channels between Turkey and the Greek Islands. Small craft are liable to be stopped and inspected; foreign-registered recreational yachts tend to be recognised as such and left alone, maybe subject to a radio check. The easiest way to report an incident may be to phone a marina and pass the buck to them. Mobile phone coverage is excellent throughout Turkey, and marinas normally answer and have English speakers readily available. Alternatively, the quickest way may be to phone 158, which would be connected directly to the coastguard.

It is no longer possible to slip between Greece and Turkey without formally clearing out and in, which can be expensive and time-consuming. It is best to stay on one side or the other until you have to cross over. In Turkey, where regulations are more strictly applied than in Greece, yacht owners clearing in or out are expected to use a registered agent, with concomitant additional costs. It is suggested that Didim is avoided as a port of entry: there are no officials on site, it is slow and expensive.

Navitus Bay Wind Park refused development consent

The application for the Navitus Bay Wind Park for the South Coast of England has been refused development consent by the Secretary of State for Energy and Climate Change.

Navitus Bay Development Limited's proposed wind farm would have been located off the Dorset and Isle of Wight coasts in popular sailing waters. Both the Application Development for a wind farm of up to 194 turbines and the Turbine Area Mitigation Option – reduced from 153sq km to 79sq km and with a maximum of 105 turbines – were refused development consent. The Secretary of State appears to have based her decision primarily on the impact the proposed development would have had on the Dorset and East Devon Coast World Heritage Site and Areas of Outstanding Natural



An artist's impression of the proposed Navitus Bay Wind Park

Beauty, rather than socio-economic considerations or the potential loss of amenity.

The Royal Yachting Association (RYA) welcomed the decision, saying it had raised concerns to the Planning Inspectorate about the impact of phased construction, operation and maintenance vessel traffic on the usability of South

Coast ports and the western Solent by recreational boaters.

The Navitus Bay Wind Park application is the 11th offshore wind farm application examined by the Planning Inspectorate. The refusal followed a six-month examination.

In a statement, the Challenge Navitus opposition group said:

'The government followed the examiners' recommendation of refusal, so this is not simply a political decision.

'This proposal was in one of the worst locations of all the new offshore wind farms and we are relieved that the government has agreed that the plan was ill-judged. With so many valid reasons for opposition, and unprecedented levels of objection, it would have been irrational to allow this scheme to proceed.

Stuart Grant, project director at Navitus Bay, said the company was 'clearly disappointed' by the decision. He added: 'During the past five years the project team has carried out comprehensive stakeholder and community consultation. We will now discuss the options available with our shareholders and update stakeholders in due course.'

All aboard the new ARC Channel Islands 2016 Rally

Entries are open for World Cruising Club's new ARC Channel Islands 2016 rally following a launch event at the Southampton Boat Show.

Run in association with RYA Active Marina and with the support of Hamble School of Yachting and Practical Boat Owner magazine, ARC Channel Islands offers a mix of preparation advice and support from a lead boat, combined with a cruise-in-company and social activities ashore. The fleet will set sail from Premier Marina in Gosport on Saturday 20 August for the first leg to Cherbourg. The rally will visit Jersey, Guernsey and Alderney, with each stop allowing time to explore ashore and meet up with other crews over a rally meal or sundowner on arrival.

The overall route and daily schedule is adaptable for prevailing weather conditions and rally staff will be on hand throughout, offering a tour of Guernsey and a visit to the Second World War military hospital, as well as a ride on the Alderney railway. The fleet will return to Gosport following an overnight sail from Alderney, and conclude the rally with a farewell dinner on Saturday 27 August.

The first 10 boats to sign up will be entered into a prize draw to win a set of charts and pilot books worth £270, courtesy of Imray. All confirmed ARC Channel Islands entries can save up to 30% on selected Imray charts and pilot books once they have signed up to the rally. Due to space restrictions, ARC Channel Islands is limited to 25 boats



The ARC Channel Islands route

and places will be allocated on a first-come, first-served basis. The entry fee includes all berthing for the duration of the rally, GPS satellite tracking of each yacht, the support of a lead boat and World Cruising Club staff on hand throughout the rally.

The boat fee based on LOA is: 8.23-12m, £570; 12.01-14m, £630; 14.01-18.29m, £690. The crew fee for RYA members for the whole rally is: £145 for adults; £75 for children aged 6-18. Single-leg crew fee, £75. RYA non-members will pay an increased rate to include membership. To find out more call the World Cruising Club on +44 (0) 1983 296060, email mail@worldcruising.com or visit www.worldcruising.com/arcchannelislands.

Name UK and Ireland's wind storms this winter

The Met Office and Met Éireann have announced a pilot project to name wind storms that are expected to affect the UK and Ireland.

The UK and Ireland's national met services, the Met Office and Met Éireann, operate to maintain public safety through severe weather warnings and forecasts. In recent years, the naming of wind storms that affected Ireland and the United Kingdom (such as the 'St Jude's Day' storm) has highlighted the benefits of establishing a formal system for the naming of mid-latitude storms. Tweet @metoffice using #nameourstorms followed by your suggestion; provide your suggestions through the Met Office Facebook pages; or email pressoffice@metoffice.gov.uk with 'nameourstorms' in the subject line.

A list will be compiled and storm names will be taken in alphabetical order, alternating between male and female names. A storm will be named when it is deemed to have the potential to cause 'medium' or 'high' wind impacts on the UK and/or Ireland, ie if a yellow, amber or red warning for wind has been issued by Met Éireann and/or the National Severe Weather Warning Service. (NSWWS).



A storm hits Brighton Marina

Navigation lights warning

Replacing filament bulbs with white LEDs in tricolour navigational lights could result in vessels not being insured, the Cruising Association (CA) has warned.

Coloured light fittings designed to use filament bulbs are not suitable for LEDs, claim the CA's Regulation and Technical Services team (RATS), and could invalidate insurance in the event of an incident. White LEDs do not emit the wavelengths required to correctly illuminate the red and green sectors, so the colours observed are totally outside of the IMO specifications. Also, a tungsten filament bulb has a single vertical wire as the light source, whereas LEDs emit light path angles greater than the permitted 2° cut-off limit between tricolour sectors. This issue does not affect navigation light fittings designed to take LED bulbs.

Yachtsman dies in Clipper Round the World Race

A 49-year-old paramedic has died just days into racing on the first leg of the Clipper Round the World Yacht Race.

Andrew Ashman, from Orpington, Kent, was one of the crew aboard the IchorCoal boat CV21. He never regained consciousness after being struck by the mainsheet while reefing the mainsail on 5 September, approximately 120NM off the Portuguese coast. The boat's skipper Darren Ladd said Andy was involved in reefing the mainsail in moderate seas in a strong breeze building to Force 6. Andy was knocked unconscious by the mainsheet and possibly the boom (although not confirmed). He was given immediate medical assistance and resuscitation was attempted, but he failed to regain consciousness.

The boat linked immediately by satellite phone to the medical team at Praxes Medical Group, the Clipper Race remote telemedicine support service based in Halifax, Canada, where a doctor provided additional advice and guidance during the emergency. A full investigation will be carried out.

CV21 diverted to Porto, Portugal where the crew were met by Clipper Race Founder Sir Robin Knox-Johnston and members of the race team. This is the first fatality in the history of the race.

The IchorCoal crew decided to keep racing following the tragedy. Skipper Darren Ladd said: 'I think the only way we can all deal with it is to get back sailing and do it with Andy in our hearts and minds at the same time.'

■ www.clipperroundtheworld.com



Andrew Ashman

onEdition

DIARY DATES

- **Scotland's Boat Show**, 9-11 October, Kip Marina, www.scotlandsboatshow.co.uk
 - **Kent Boat Jumble**, 11 October, The Hop Farm, Paddock Wood, Tonbridge. Entry £4, www.boat-jumbles.co.uk
 - **East Hants Boat Jumble**, 1 November, Havant Leisure Centre. Entry £3.50, www.boat-jumbles.co.uk
 - **Lost rivers of London talk**, 5 November, Arthur Beale Yacht Chandlers, London SC2H 8JP, admission £5, www.arthurbeale.co.uk
 - **London Boat Show**, 8-17 January 2016, www.londonboatshow.com
 - **Irish Boat Jumble**, 10 April 2016, Carrickfergus Sailing Club, Rodger's Quay, Carrickfergus, Co. Antrim, www.irishboatjumble.org
 - **Beaulieu Boatjumble 2016**, 24 April, 9am-5pm, www.beaulieu.co.uk/events/boatjumble
 - **The Transat 2016**, Plymouth will be hosting the race start on 8 May 2016 – The Transat is the successor to the original solo race across the North Atlantic that was born as the OSTAR in 1960, www.thetransat.com
 - **Push The Boat Out 2016**, 14-22 May, UK-wide event with sailing clubs and venues offering discounted and free taster sessions, email ptbo@rya.org.uk
 - **Sail Caledonia 'raid' 2016**, 28 May to 4 June, organised by The Great Glen Boating Club, involves almost 70 miles of cruising and racing through the Great Glen from the Atlantic Ocean at Fort William to the North Sea at Inverness, www.sailcaledonia.org
 - **ARC Channel Islands Rally**, 20-27 August, www.worldcruising.com/arcchannelislands
- Send your diary dates to pbo@timeinc.com, see more online at www.pbo.co.uk

Win Hantu Biru at Scotland's Boat Show

The PBO team will be exhibiting the fully-restored project boat *Hantu Biru* at Scotland's Boat Show.

At the time of going to press, the team at Kip Marina had just taken delivery of our Snapdragon 23. *Hantu Biru* travelled up to Inverclyde from the Southampton Boat Show after a brief stop at Swanwick Marina, thanks to John Shepherd Boat Transport. Throughout Scotland's largest boat show (Friday 9 October to Sunday 11 October), visitors will be invited to step aboard *Hantu Biru* and to enter a competition to win her. The winner will be announced shortly after the London Boat Show in January. You can enter online at: www.pbo.co.uk/winhantubiru.



Visitors step aboard the PBO Project Boat *Hantu Biru* at the 2015 Southampton Boat Show

WIN THIS BOAT!

Free PBO expert talks

Following the success of the inaugural PBO Ask the Experts LIVE! at Beaulieu Boatjumble, we're teaming up with RYA Scotland to hold more free talks and demonstrations. Find us in the RYA Scotland Workshop Marquee.

In addition to RYA Scotland's scheduled talks, the PBO experts line up will include:

Friday 11.30am and Saturday 4pm: **Essential sealant tips and tricks**. Sika's technical services

expert Gareth Ross will demonstrate how to use sealants for bonding and waterproofing on board.

Friday 2pm: **Liferaft demonstration**. Ocean Safety will discuss the importance of getting your safety equipment serviced, complete with a demonstration liferaft inflation.

Friday 4pm and Sunday 3pm: **Hints and tips for viewing second-hand boats**. PBO expert Colin Brown, of CB Marine Services, will talk about common problems that arise during surveys of second-hand boats and discuss

common corrosion issues.

Saturday 3pm and Sunday at 11.30am: **Professional paint job made easy**. International Paint's Kate Moss will explain how to achieve a mirror finish on your paint job.

Scotland's Boat Show is open from 10am-6pm daily and admission is free. Car parking is £5.

■ www.scotlandsboatshow.co.uk



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News from your cruising area

Send us your local news stories. Email PBO news editor Laura Hodgetts at news@pbo.co.uk, tel: 01202 440825, or write to the address on page 5

SOUTH

FREE WI-FI

Visiting seafarers can enjoy faster internet speeds at Cowes Yacht Haven thanks to a new, free high-speed Wi-Fi service. WightFibre has installed two new fibre optic cables into the site and 10 new Wi-Fi access points across the marina. Hundreds of users at any one time can access the internet for free on the 1Gb (1,000 Mb) network. There is also a premium paid-for service available for those looking to stream films or television, priced at £3 per day, £5 for three days, £10 per week or £25 per month.

CHANNEL ISLANDS

GROUNDING YACHT

A French single-handed yachtsman miscalculated the tidal height over the sill when leaving Victoria Marina in St Peter Port, and his yacht grounded on the falling tide. The 11.8m (39ft) *Heolia* from St Malo sat on the drying sill for about six hours awaiting the next rising tide: *Heolia* was helped by the harbour staff and eventually tied safely over the drying pad alongside the quay in the marina. Damage was only



Heolia grounded in Victoria Marina

superficial, and the yacht set sail the next day. Victoria Marina's fixed sill at dries 4.2m, giving access about 2½ hours either side of high water depending on the vessel's draught.

SOUTH-WEST

CLOSURE CONFUSION

The closure of Exeter Canal for major bridge repair work from 10-18 August has left a liveaboard sailor out of pocket. The boat owner, who does not wish to be named, says the unannounced lock closure – which was not publicised as a local Notice to Mariners – has resulted in his yacht being 350 miles away. Following liaison with Exeter Canal Office, the

WALES

ELECTRICAL FIRE

A blaze that devastated a 10.4m (34ft) yacht at Deganwy Quays Marina on 19 September was caused by an electrical fault. A spokesman for North Wales Fire & Rescue Service said a person was on board the yacht, *Sandpiper of Hamble*, when the fire started and tried to extinguish the fire before evacuating the boat. Two fire engines from Llandudno responded to the 3.51pm call, and crews found the yacht 'well alight', moored alongside a jetty. They had extinguished the fire by 6pm.

RNLI TRAGEDY

While launching Pwllheli RNLI's all-weather lifeboat to attend a grounded yacht on 20 September,



Sandpiper of Hamble on fire at Deganwy Quays Marina

Second Coxswain Robert Wright suffered a suspected heart attack. Fellow crew members administered treatment and the lifeboat

immediately returned to the marina, where Mr Wright was airlifted by rescue helicopter to hospital in Bangor. Sadly, despite the best efforts of the lifeboat crew and emergency services, Mr Wright was pronounced dead after reaching hospital.

Mr Wright joined Pwllheli RNLI in 1970 and received several awards from the institution, culminating in an MBE in 2008 for voluntary service to the community and the cause of saving lives at sea.

Pwllheli's inshore lifeboat and Criccieth RNLI's lifeboat were subsequently tasked to assist the grounded yacht on Pwllheli beach which prompted the initial launch.

David Taylor, Conwy Boat Tours

sailor travelled from Hartlepool to collect his newly-bought Halmatic 30 from the Exeter Basin site in early August. However, when he tried to book his passage through the ship canal, he was informed of the closure. He was given the option of leaving immediately, but could not due to repair work being undertaken on the mast. He said: 'Exeter City Council demand three working days notice of passage, but expected me to drop everything and make passage with virtually none. Also on board was an eight-year-old child.'

The sailor said he had to return to the North-East Coast without his boat and with the extra cost of renting accommodation until the situation is resolved. An Exeter council spokesman said: 'We're investigating the complaint and will respond in due course.'

NORTH-WEST

TALL SHIP SINKS

An investigation is under way after one of Liverpool's historic tall ships sank in the deep waters of Albert Dock. Emergency services were called to *Zebu's* mooring on 4 September. Formerly a Baltic timber trader for 30 years, *Zebu* was built in 1938 and later re-rigged as a Victorian-style brigantine. She has been based at the dock since 1988.

Susan Hanley-Place, chief executive officer at Mersey Heritage Trust said: 'As soon as tides permit the diving support vessel to arrive in Albert Dock, the raising of *Zebu* will commence. She is likely then to be floated into the Canning Half-Tide

Dock, where dozens of volunteers will do their best to ensure this magnificent brigantine sails again.'

IRELAND

'GHOST YACHT' SUNK

A yacht that crossed the Atlantic after being abandoned more than a year ago has been sunk by the Irish Navy. Yacht owner Thomas Mallonat left the cruiser *Troll* in October 2014 near Bermuda because of a medical emergency with his wife. Although never expecting to see it again, he was advised of a recent sighting by an Irish Maritime Patrol Aircraft and travelled to Cornwall in the hope of retrieving the boat. However, it was sunk in the meantime.

The cruiser was adrift in the UK Search and Rescue area of responsibility (that lies within the Irish Exclusive Economic Zone). It was deemed to be a navigational hazard and at the request of the UK Coastguard, the L.É. *EITHNE* sank *Troll* 131NM south-west of Mizen Head.



The Irish Navy sank this 'ghost yacht' as it was a hazard to navigation

MARINA CHANGES HANDS

Lough Derg Marina has been sold to a local investor for €1.7million. This is more than three times the guide price, but falls well short of the €8 million paid in 2006 when it last changed hands and reflects the fact that it has fallen into disrepair. The 250-berth marina at Killaloe has 500m of lake frontage, a workshop/warehouse, an ancillary first-floor showroom and an adjoining first-floor apartment. The marina needs refurbishing but, subject to planning permission, a new marina could be built on the 7.18-acre site with berthing, cruiser rental and other activities.

SCOTLAND

TEEN SAVES GRANDFATHER AFTER FALL FROM BOAT

A 13-year-old boy has been praised by coastguard staff after he saved his grandfather who had fallen overboard from their speedboat. The teenager managed to hold onto his grandfather by a rope while he called 999 to report the incident on Loch Fyne on 5 September. A local vessel responded to the coastguard's relay emergency and assisted the boy in recovering his grandfather back on board. A rescue helicopter airlifted the man to hospital to be checked over.

Dawn Petrie from the Coastguard Coordination Centre at Belfast said: 'We were struck by how bravely and sensibly this young boy behaved. He deserves to be commended for his courage and quick thinking.'

EAST

PBO TROPHY WINNER

Bob Smith from Leicester made a 328-mile round-trip to scoop the PBO Miles to Maldon trophy for the boat towed furthest to take part in the Maldon Town Regatta. As a bonus, 71-year-old Bob (with crew Peter Shepherd) sailed his 35-year-old Sailfish 18 into third place in the cruising yacht class in the September 19 event on the River Blackwater in Essex.

Although shy of the record set last year when Gwilym Newnham towed his 4.9m (16ft) Winkle Brig 503 miles from west Ireland, retired chartered engineer Bob has already racked up well over 1,500 miles this year towing



Dave Selby

Bob Smith with his trophy

Bobkat to Plymouth, Chichester Harbour, The Orwell and three times to the Norfolk Broads.

Bob described the Blackwater as 'a great playground' and added: 'A big attraction is sailing into Maldon with all its Thames barges and the great party and hospitality after a long day's sailing. It's well worth the effort.'

RIVER COLNE OBSTRUCTIONS

Three temporary structures, marked by 30cm-diameter yellow floats, have been laid on the bed of the River Colne outside the main navigation channel, off the entrance to Alresford Creek and downstream of Priors Wharf, Fingringhoe. The structures extend approximately 2m above the seabed and are recording information in support of the development of Fingringhoe Wick Nature Reserve. Their exact positions are:
51° 50.883'N 000° 58.364'E;
51° 50.511'N 000° 58.787'E;
51° 50.238'N 000° 58.864'E.

All vessels should keep at least 5m clear of the structures, which are expected to remain in place until November, and should not moor in the vicinity.

■ www.eastcoastpilot.com

MARINA PLAN RULED OUT BUT REPAIRS GO AHEAD

Plans for a marina to be built in Stonehaven harbour have been ruled out. A feasibility study for Stonehaven Town Partnership reported that the £8million project was not commercially feasible, but recommended that work should be carried out on the outer breakwater, south pier, net pier, fish pier, storm gates and booms to prevent further deterioration. There are currently nearly 140 regular moorings fully occupied in the harbour, plus a waiting list.

NORTH-EAST

SCHOONER PICKLE

The replica HM schooner *Pickle* arrived at her new home in Hull on 25 September. The Royal Navy patrol vessel HMS *Explorer* escorted the recently-restored *Pickle* into Hull Marina. The original HM schooner *Pickle* was a 72ft two-masted vessel, built in 1799, which brought news of Nelson's victory at the Battle of Trafalgar to the UK. The replica schooner was built in St Petersburg, Russia in 1996 and

had been operating as a charter vessel, based on the Welsh coast.

SOUTH-EAST

NEW RAMSGATE PONTOONS

Chain moorings in Ramsgate harbour have been removed and replaced by 30 floating pontoon berths. The new pontoons are sited at the Western Gully of the Royal Harbour Marina, between the Commercial Quay and West Pier, and will provide easier berthing for members of the Ramsgate Small Boat Owners Association (RSBOA). Funding for the scheme was provided by the Port of Ramsgate and Thanet District Council.

DRUGS YACHT

Border Force officers seized 1,200kg of cocaine with an estimated street value in excess of £56million from a yacht at Dover. The yacht, *Golem*, was intercepted off the Kent coast on 31 August by the Border Force cutter, *Vigilant*. Two Dutch nationals aboard, Hendrik Brugmans and Raymond Aalders, were arrested. Brugmans, 68, who gave an address on the island of Curaçao and Aalders, 46, of Kesteren, Netherlands, appeared at Folkestone Magistrate's Court on 2 September charged with drug trafficking offences. Brugmans withheld his plea while Aalders denied the charge. Their case has been listed for trial at Maidstone Crown Court on 22 February 2016.

INLAND

NARROW BOAT VOYAGE

A Doncaster man with a terminal illness has set off on a charity narrow boat voyage across the UK. Shortly after being diagnosed with stage four lung cancer, Kevin Duckham bought *Daydream* from Strawberry Island Boat Club. He set off on his 61st birthday, on 11 September, with his partner Kayla Mead. They will travel through Thorne to the Keadby junction, join the River Trent and travel south to Bristol, raising money along the way for palliative care providers.

PRACTICAL

Winter engine maintenance

■ What you need to do to ensure your engine survives the cold snap

Plus

- Installing a VSR
- Servicing a turbocharger
- Carrying out keel repairs
- Restoring a catamaran

TESTED

Battery chargers

■ Compared for speed, ease of use and reliability

Winter gloves

■ Can you perform boat tasks while keeping your fingers warm?

BOATS

An overseas overview

■ Bargain foreign-built 28-30ft cruisers from the '60s onwards

40 years, 30 boats (so far)

■ One man's sailing history, from a Graduate-class dinghy to a Coaster Passagemaker 33

SEAMANSHIP

Constructing a jury rudder

■ A reader is forced to improvise after his boat's rudder breaks

Casting off

■ Different techniques demonstrated

Curing weather helm

■ How to maintain the perfect balance

CRUISING

The River Dart

■ On the water in deepest Devon

DECEMBER ISSUE ON SALE
THURSDAY NOVEMBER 5

Contents subject to change



Bargains of the month...

More great bargains in the Chandlery section starting on page 52

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Readers share their thoughts and opinions

POTENTIAL DANGERS OF A SHORT-CIRCUIT IN POWERED WINCHES

Perish the thought

■ While cruising in Brittany this year we met a couple on another yacht. The husband had suffered a deforming injury to his finger: he had been tidying the jib sheet on its powered winch when it started to turn of its own accord, trapping his fingers in the tightening rope and winding his arm around the winch.

Luckily it stopped itself after a few seconds and his wife was able to help free him, but not before a layer of skin had been removed down to the tendons and the ligaments torn. He spent over six weeks having skin grafts and other medical treatment for this painful and terrifying injury. He has been

told his recovery will take many months or even years, and there is no certainty that it will be complete.

Apparently, the power button for the winch had a rubber cover which perished so that invisible cracks allowed water to enter the switch, causing it to short-circuit without warning. The winch manufacturer was aware of the defect in its product and has admitted liability and paid our friend's medical fees. No doubt compensation will follow.

The only action the manufacturer had taken prior to this event was to issue a notice to advise owners to replace the switch every three years. How many owners have seen that notice? The

manufacturer said it had not amended its design because boatbuilders had not asked for any changes to the set-up.

A simple solution would be to fit two switches in series (more than one hand span apart) for each winch. This would protect users against the risks of (1) catching fingers and (2) shorting switches. (1): Both hands would have to be clear of the winch before it could be powered up. (2): A shorted switch could not start the winch on its own and could easily be detected as long as the user were to press a different switch first before each use.

One might argue that both switches could short at exactly the same time, but the chances of that must be extremely remote. In the longer term, it cannot be

beyond the wit of a major manufacturer to make a switch that cannot short-circuit and does not rely on a flimsy, perishable rubber cover?

The unfortunate couple told us they had discovered other accidents caused by this defect. One lady had part of her arm torn off by her powered winch while hoisting her husband up the mast, and another gentleman lost eight of his fingers.

This is an appalling state of affairs with an easy and cheap solution: I hope you will publish this letter to warn users of powered winches of their dangers and to pressurise manufacturers into selling installations that are safe.

Chris Mardon, by email

Casting around

■ In PBO September, Iain Lindsay asked if anyone still supplies the castings of the Parsons injection unit for cooling the engine exhaust. I had one such unit on my 1938 motorboat, but it fell apart on me, and the problem was the castings. If you want to get hold of an original, the son of the chap who used to make them still has the facility to cast them, but quoted £940 for doing so when I asked about it. I ended up having the unit made in stainless steel for £350.

Rob Bull, Bude

Everlasting luff

■ Like the owners in your article 'New Sails: worth it for an Old Westerly?' (PBO October), we also bought an old twin-keeled Westerly ketch on a tight budget. Ours is a Pentland, the 9.4m (31ft) predecessor of the Westerly 33 in your article. However, your Westerly owners missed a great opportunity to improve an outdated sail plan.

On purchase, we were surprised and disappointed that our Pentland with her original sail plan was over-canvased and

uncomfortable in any wind over a Force 3/4 without serious reefing. In particular, the fairly new 150% genoa, so fashionable in the 1970s, was a real handful. Although the original Ratsey & Laphorn mizzen resembled Nora Batty's nylons, the newish fully battened mainsail was fine. Clearly, the problem was the big genoa.

Knowing that most of the power of a genoa comes from the luff, we commissioned Quay Sails of Poole to cut a new, smaller, but full height 110% headsail. They recommended a Bainbridge Ocean Dacron, a padded luff and three sets of telltales. Quay Sails did a brilliant job: this smaller

headsail has transformed the boat. After nearly 1,000 cruising miles this summer, she goes faster, points higher and is much more comfortable. We now tend to reef the main before taking the easy option of rolling the new genoa, and on top of this, visibility is now tremendous.

Our experiment proves that not only are new sails a great investment, but modern sailcloths also enable us to rejuvenate the outdated sail plans of old cruisers. Next, we're going to take your advice and play with a barber-hauler before we replace the dear old mizzen sail.

Esmond White, Avocet of Medway

The sands of time (saved)

■ I've been lying in Poole Hospital for the last nine days with nothing to pass the time apart from your excellent Project Boat Handbook. After reading about the hassle and expense of sourcing sandpaper and the large effort of sanding, I'd just like to pass on a few recommendations through my work as a craftsman. I've tried most makes, prices and types of sandpaper over the years, and the two I solely use these days are Mirka Abranet (which is a holey mesh material) and Festool Granat. Yes, they are eye-wateringly expensive at nearly £1 a disc, but they keep cutting without clogging. In the long term, the savings add up. Same goes for a sander: I use a Festool Rotex with full dust extraction. You can use it like a planer, and it sands everything. Again, it's very pricey brand new, but savings can be made on eBay etc – and the time saved on jobs will be massive.

Joe Hart, by email



PEYTON'S PICK FROM THE PAST



'Relax, I always play safe and follow another boat over the Bar'

Taken from Practical Boat Owner March 2000

In all honesty

■ I visited Eilean Mòr recently after seeing it in your 'Free anchorage' feature (PBO September). I've visited the island regularly over the years as my Macwester Rowan 22, *La Mia*, is moored in Loch Sween. I tried to recreate the photo in John Simpson's article, but the wind had changed since his visit.

Although the anchorage is technically free, the trust for the island does ask for a donation in their honesty box to help with upkeep of the jetty, visitor centre and the island itself.

Robin Gosman, by email



Robin Gosman's Macwester Rowan 22, *La Mia*, in Eilean Mòr

Sole purpose

■ The first time I wore my DuBarry sailing boots I was racing in a Force 8, and from that day onwards I was a fan. They weren't cheap, but having warm, dry feet in those conditions is priceless. Since then I have crossed oceans, sailed in a dozen countries and taught hundreds of students – and recommended these boots to most of them.

Recently the soles have worn down and no longer grip: nevertheless, the leather is still almost as new, so I contacted the company to have the boots resoled, only to be told that changes to the design mean they can no longer be repaired, and I was advised to 'buy a new pair'. This sits very poorly with me for so many reasons: DuBarry used to make boots which could be resoled, so why was this change made?

Richard Keeling, by email

Laura Egan of DuBarry replies: DuBarry changed over to direct-inject moulded technology in the early 2000s to provide a far superior sole bond. Prior to this our soles were 'stuck and stitched' to the leather uppers. With the direct-injection moulded process the sole is effectively fused onto the upper, resulting in a significant reduction in sole bond failure. However, as there is no longer a defined separation of sole and

upper, we cannot replace the sole. It is our experience that sole wear is quite rare given the high density of the rubber outsole, especially if worn primarily on the deck of a boat as opposed to everyday-wear on hard stone and concrete surfaces. Replacement of the sole is possible in some circumstances, but we cannot always stand over the integrity of the Gore-Tex lining which can become compromised when attempting to separate sole and upper. In Richard's case we would be happy to carry out this evaluation if he wishes to get in touch with me.

The wrong long

■ I have just got around to reading Claudia Myatt's fascinating article 'Castles, crab pots and a man called Chaos' (PBO August). One thing puzzled me, though: Claudia reported seeing the Longships lighthouse to port when sailing inshore of the Farne Islands. As I live in south-west Cornwall I am used to observing the very same lighthouse a mile or so off Land's End! Could she be mistaken for the more picturesque but shorter Longstone lighthouse, perhaps?

Charlie Hood
SY Santiana, Newlyn

Claudia Myatt replies: Oops! That would be seriously bad navigation, wouldn't it? Definitely a slip of the fingers: well spotted, Charlie. I do spend plenty

of time in Cornwall looking at Longships light and sketching it from the shore, so it was obviously on my mind! Many apologies.

Raft up or put up?

■ For many years now, it has been commonplace for sailors to raft up with other boats in harbours and marinas. We no longer question whether it is fair that full dues are charged for each of the craft using the same berth. I recently visited one such place where the authority had made more residential berths, thus reducing the visitor capacity.

I can understand why this was done, as the residents bring in a steady income while summer trade is spasmodic. I'd be dreaming if I thought any marina or harbour would be so benevolent as to give a discount to all involved. Nevertheless, surely that should be the case? I realise that this may not be practical as friends would raft up deliberately, and it would be openly

SEADOG OF THE MONTH



■ This is our border collie Isla, pictured at the age of 13 weeks on her first sail from Oban. She loves being on *Alteena*, our MG30, and is an amazing little seadog: but she's not keen on her lifejacket just yet!

Laura Stewart



Seadogs galore!

Visit our seadog gallery at www.pbo.co.uk/seadogs or scan this QR code with your smartphone.

Send us your seadog photos for our web gallery and your pet may be lucky enough to become Seadog of the Month and win you £30

abused with rallies. Obviously the answer is to refuse to be rafted up, but that is often the only option. Sometimes rafting can be horrible, with people thumping across your deck or wanting to leave at unearthly hours: but it can also be amicable, and I have made many new friends in such a situation.

Jim Mottram, by email

PBO PUZZLE 195

What does an area marked by this dashed line and symbols denote on a chart?

- A. Tidal flow station
- B. Minelaying (and countermeasure) practice area
- C. Firing practice area
- D. Wave farm

■ Find the solution at the bottom of page 98



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Dave Selby

Mad about the boat

Dave Selby is the proud owner of a 5.48m (18ft) Sailfish, which he keeps on a swinging mooring on the picturesque Blackwater estuary in Essex

Berth control for men

Dave Selby describes the tortuous boat-handling processes which led to him being rear-ended by a pontoon

Have you ever been rear-ended by a car? That's what just happened to me... in my

boat. There wasn't actually a car involved, but something quite a lot bigger. I really don't know where it came from, but all of a sudden this bloomin' great pontoon came out of nowhere and drove right up my backside.

That's my version, and fortunately there were witnesses. Unfortunately, they're proving rather inflexible, and so is my neck on account of my near-mortal whiplash injury in which even the most disreputable no-win-no-fee lawyers are exhibiting no interest whatsoever. It's scandalous. I just can't get any traction, which is ironic, cos one even said my neck was made of brass.

In fact, it was just like one of those incidents in supermarket car parks, which in a way are just like marinas. They're both full of hazards and obstacles and totally unpredictable behaviour. Plus, boats in marinas have all the handling poise of a three-wheeled supermarket trolley. The main difference is

that when something goes wrong in a car park, people look the other way. That doesn't happen in marinas.

Here, for the benefit of South Coast sailors, I should explain that I use the term 'marina' in the authentic Essex east-coast sense of a boatyard with a tap.

My normal practice when leaving my rather snug mud berth is to spend several hours making a plan, dithering over

the endless permutations of tides, eddies, water, wind direction and wind speed. It's different every time. Then I go to boatyard manager Adi, who points out the flaws in my plan and tells me what to do. Other berth-holders have come to recognise the signs of my imminent departure and generally take the opportunity to air their mattresses by lashing them to their stanchions on the side of their boat nearest to me.

It also happened that Adi and his dispiriting work ethic were both on holiday. Power tools slumbered, open tins of varnish dried in the sun, no one was splicing ropes. We'd lost focus, and a lot of decadent tea drinking was going on. And without Adi's wise counsel I was left to my own devices. I had a plan. I'd recently seen our local marine engineer, a demon boat-handler, reverse out a tricky long-keeler, and as the berths opposite were empty that encouraged notions of doing the same, rather than warping my boat round.

It's well known that the only

I use the term 'marina' in the authentic Essex sense of a boatyard with a tap

thing harder than going forwards in a boat is going backwards, and mine is trickier than most, as you need the limbs of an octopus. My outboard has no reverse gear, so it involves holding the tiller firmly with one hand and swivelling the outboard with the other. Then you need a third hand to fumble for the throttle lever, which by now is out of view and outboard of everything else, a long arm's

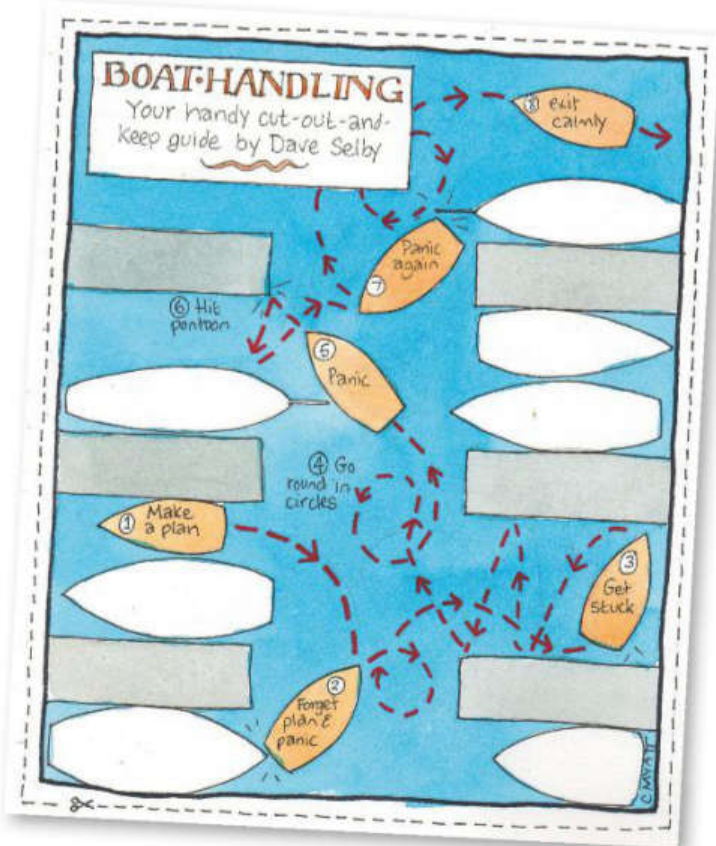
stretch on the far side of the engine right next to the choke lever, which feels exactly the same, and as left has become right it's even more confusing. Finally, there's a gear lever which is also now on the other side of the engine. Basically, it can't be done.

Nevertheless, it was going well at first. Then it wasn't. With each input I was getting nearer the sharp end of the downriver finger pontoons. I was committed, and my options had evaporated. In a last-ditch effort to save the situation before I ended up long-ways between

two finger pontoons, I started spinning the engine round between forward and reverse while it was still in gear. This is something you're not supposed to do. Next, I fumbled to take it out of gear, but someone had moved the lever, so I scrambled for the throttle but found the choke instead. It was round about then that the pontoon rammed me up the chuff, which is the traditional East Coast nautical terminology for what South-Coasters call stern.

That night in the beautiful solitude of Pye Fleet I reviewed my options. Most appealing at first was to never go back to Maldon to face the shame, and stay in Pye Fleet 'til my date-expired Pot Noodles ran out. In sober reflection, I realised I simply couldn't face that many Pot Noodles. Option B was to bribe all the berth-holders to keep schtum so Adi never got to find out what goes on while he's on holiday. I liked that plan, but it had a flaw. The scuff on my boat's bum was a give-away. In haste, I called local boat painter Cally and begged her to touch it up super-pronto.

But like most of my plans, it didn't work. The very second Adi stepped off his boat after his holiday, he said: 'I hear you had a bit of a run-in with a pontoon'. All of a sudden everybody started picking up power tools, varnishing and splicing ropes. Our focus was back.



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Sam Llewellyn

Flotsam and jetsam

Sam Llewellyn is editor of *The Marine Quarterly*, www.marinequarterly.com, and author of nautical thrillers. Three years ago he bought a Coribee on eBay

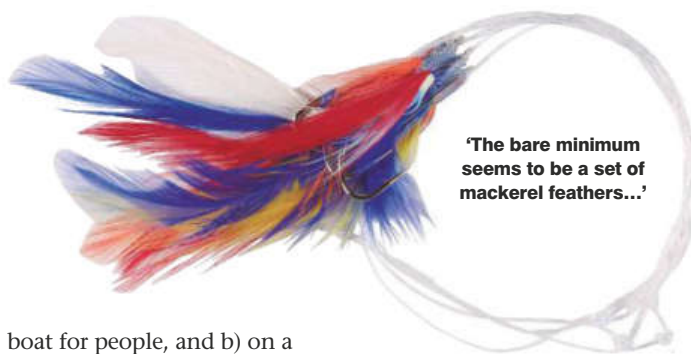
Nearer my Cod to Thee

How we used to catch fish by deploying butt pricks, rubber eels and seine nets – plus some other trawl tales

You are sitting on the boat in a lonely anchorage. The sun is going down, and you are speaking of this and that, when someone says, 'So what's for dinner?' You take a look at the ship's stores. These amount to three tins of borlotti beans, half a loaf of mouldy brown bread, two-and-a-half chocolate digestive biscuits, and a tin of sardines. The same someone makes a face, and says, 'Hasn't anyone been fishing?'

Once, boats carried many contrivances designed for the slaughter of marine life. There was the drag, an awful bit of iron with huge hooks welded to it in line abreast, which was supposed to be towed along the seabed in Norfolk, hooking up flatfish by the stone, though actually all it ever hooked up was weed by the ton. Then there was Mike, who had an actual trawl designed for a small boat, its usefulness roughly the same as the drag (see above). There were also seine nets, fyke nets, butt pricks, which is Norfolk for flatfish spears, and a variety of other horrors. But in an age where much of the seabed has been trawled into a biodiversity reminiscent of a front drive in Epping, none of the above seemed right, plus they hardly ever caught anything. So the more elaborate devices got left in the garage.

Lobster pots are better, because there still seem to be some lobsters around. The collapsible model is a bit feeble; the professional kind, inkwell or parlour, is more efficient. The disadvantage here is that a) they leave no room on a small



boat for people, and b) on a large yacht they shed rust on the ice-white topsides, so keen potters spend two days scrubbing, first with Jif and then with toothpaste, and end up donating the pots to the first person they meet on the quay at Mallaig.

The bare minimum seems to be a set of mackerel feathers

Seals will follow you round a pollack mark, scaring off every fish in the Kintyre region

and the odd rubber eel for trolling round the rocks after pollack, an excellent vehicle for tomato ketchup when disguised in egg and flour. But seals love pollack, and there are plenty of seals around – friendly creatures which will follow you round a pollack mark, scaring off every fish in the greater Kintyre region and

reinforcing the normal state of fishing, which is not to catch anything.

Though the pendulum can swing too far in the other direction. A keen fisherman invited himself aboard a friend's boat last year. He filled the beer box with worms, and every time the friend put the anchor down the fisherman's bait followed it. Nothing bit. Then one evening his line started to go out, and his rod to bend, and he struck mightily, and after a long dour battle he pulled in a conger the size of his leg. Memory (said the friend) is mercifully dim, but (he said) he had a strong recollection of the creature lashing around in the cockpit

like a slime-crusted demon from a nether hell, and someone picking it up with socks on their hands and flinging it back into the sea. The socks were never quite the same again, but the sacrifice seemed worth it. The fisherman went ashore, unlamented.

Dragging lures for mackerel causes less trouble – though if your skipper is a racing person he is likely to tell you you are slowing the boat down and would you please get that ruddy thing in because it is knocking a nanoknot off the speed and no mackerel can swim this fast anyway. This is almost certainly nonsense, but it is folly to argue.

Raceholics notwithstanding, in the sunlit months when the mackerel are in, it is insanity not to take advantage of the situation. A new generation of cognoscenti have equipped *Surprise's* galley with soy sauce, wasabe and ginger, and hack the mackerel they catch into instant sushi. My own preference is for mackerel fried and washed down with fine craft ales, or actually anything else short of cleaning products.

But it is not just about food. You clamber into the dinghy, and row out into the shoal, and with luck you get two each, fried in oatmeal, and half a chocolate digestive for afters. And you are no longer hungry. Better still, you are warmed by the sense that you are no longer a member of a sort of seagoing Caravan Club, but a hunter-gatherer like your little tattooed ancestors.

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Andrew Simpson

Monthly musings

Yacht surveyor and designer Andrew Simpson cruises with his wife Chele in his own-design 11.9m (39ft) yacht *Shindig*. Read his blog at www.offshore-sailor.com

An extra knot isn't always welcome

Oh what a tangled web we weave when first we practise to cosset a windvane in robust trade wind conditions

Okay. It's confession time. No matter how experienced, we all get it wrong sometimes. And although it's tempting to brush such incidents under the table to protect one's reputation and/or pride, this secrecy doesn't exactly add to the sum of human knowledge. So this is the point where I bare my soul and confess to having lately been an idiot.

We were on the last leg of our recent Atlantic crossing – about three days out from Barbados to be more accurate. The electronic autopilot had long since been retired to the sickbay, and *Shindig* was being steered by our trusty Monitor windvane gear which has behaved admirably since it was fitted before launching in 2001. Readers familiar with windvanes will know that they work best in the hands of sympathetic crews who will make life as easy for them as possible. Whereas an electronic autopilot might just be able to monster some tolerable semblance of a course out of the unkindest circumstances – badly-set sails delivering loads of lee or weather helm being typical culprits – windvanes do require a bit of cossetting.

So, really it was this cossetting that led to my humiliation. In



'We now had a single foresheet nattily embellished with fancy knot-work'

robust trade wind conditions we had been broad-reaching most of that day, nudging the 6 knot mark under just a single headsail, set to starboard without a pole. In a quest for more speed we could, of course, have set its twin on the port side but at the cost of exchanging *Shindig's* comfortable motion for some gunwale-to-gunwale rolling.

I was hunched over a book in the cockpit when a flash of blue caught my eye. I looked up to see that, moreover, a line had come loose and had wrapped itself around the foresheet. Its colour identified it immediately as the upper component of a Dyneema running backstay we

only deployed when rigged as a cutter – that's to say with headsail and staysail set. As doubtless you know, a running backstay is a removable stay you can stow below when not in use. In practice it's often only the deck level components you can put away, since the stay itself is attached high up the mast with the lower end secured so it can't get loose.

Did I just say 'can't'? Clearly ours didn't understand the rules. Its lower attachment had come adrift and whipped forward producing the results described. My first thoughts were that this was no more than a minor nuisance. The snarl-up was too

high to reach from the deck, but I believed that a couple of sharp tugs would pull it loose. Wrong. The harder I pulled the blue line, the more consolidated became the tangle.

So now we had a problem. Dusk was approaching, and I had planned to gybe before nightfall. It's often the way that the run of the wind and the waves don't complement each other. This can make life uncomfortable for a windvane gear, and I believed the Monitor would do its stuff somewhat easier if we gybed. However, this would be impossible now with a pair of lines effectively attached to the sail's clew.

It was at that point I believed that the genius in me broke cover. The existing foresheet was soon due for replacement. Indeed, we had a 100m spool of 12mm polyester braidline stowed below, at least partly for that purpose. I addressed Chele and Anne, fellow crew members. 'Call me clever if you must, but why don't we cut the old foresheet and allow the headsail to gybe over to port? Without tension on it the tangle will shake loose and we can fit a brand new sheet later.'

I was later to deny they looked doubtful because I was too busy gaffer-taping a filleting knife to the boathook. We put down the helm and, choosing an appropriate place, I reached out and did the deed.

I would like to report that my solution was a winner, but it wasn't. As the photo confirms, we completed the gybe but now had a single foresheet nattily embellished with fancy knot-work. In the event we had to live with that embarrassing arrangement until anchored off Barbados, having to walk our one and only foresheet from one side to the other as we tacked or gybed.



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The ultimate DIY flopper-stopper

Keen to counteract excessive boat rocking before a trip to the Scilly Isles, Peter Lyle constructs his own flopper-stopper with the aid of some scrap lead



Lead was melted in an old cooking pan...



...and formed into an ingot, inserted into the plywood



The lead was then fixed in place with glassfibre



Assembly encased in glassfibre mat and gelcoat

Just occasionally, the 'perfect anchorage' may turn out to be seriously uncomfortable. This is usually when the current or the wind makes the boat lie beam-on to the swell, and as a result the boat rocks excessively.

I'd heard this could sometimes be a problem in the Isles of Scilly, so I decided to build the ultimate flopper-stopper in preparation for a trip to the islands.

There are more designs of flopper-stopper than there are of mousetrap, but most of them work on the same principle: boat rocking is damped by moving some sort of contraption up and down through the water. People have tried buckets, traffic cones, drogues and, of course, pukka flopper-stoppers. I cut a 60cm square from an old sheet of 12mm exterior plywood and rounded off the corners. The bigger the area of the flopper-stopper the more drag it will cause, but also the more difficult it will be to store: 60cm square seemed about right for my 11m (36ft) boat, and it also fitted flat in the cockpit locker.

The device needed to be heavy enough to sink, so I bought 4kg of lead from my local scrap metal merchant (£6), melted this in an old aluminium cooking pan using a propane blowtorch and moulded a lead ingot which I inserted into the plywood. The flopper-stopper needed to be rigid, robust and waterproof, so having fixed the lead into a hole in the plywood with glassfibre, I encased it all with more glassfibre mat and gelcoat.

The finished contraption is suspended from the end of the boom, which needs to be hauled out as far as possible, and supported with the topping lift and a gybe preventer. It should be lowered 2 or 3m below the surface.

It works, too: our visit to The Scillies was a comfortable one.

COST
£10



The device hangs from the end of the boom



It should be lowered 2-3m below the surface...



...and it works a treat

Toerail editorial sets you straight

Robin Garside devises a cheap, simple and effective method of straightening out his boat's damaged toerail

During the storms earlier this year, I ended up with another boat hitting the toerail twice while I was on my mooring. I initially thought I would claim on the insurance, but having spoken to a couple of repairers I realised that it would be a long and expensive job, entailing the removal of the whole toerail together with the stanchions.

The boat would be out of commission for a couple of weeks, and sourcing the right toerail profile for my 16-year-old boat proved to be difficult. As I'm lucky enough to own a dry boat, I was also concerned that there would be potential leaks from the innumerable fixings being removed and replaced.

The solution was to use an old hardwood door frame and some leftover bolt lengths and nuts and washers I had in the garage. The door frame has lots of profiles, and I simply positioned them against the bent toerail then tightened the bolts. This took a couple of goes, and I had to drill a couple of extra holes in the clamp to ensure alignment with the existing holes. This home-made tool only cost a few pence as I used bits



Ouch: a conspicuously bent toerail

and bobs from my garage: I guess if I had to buy the bits it would still cost under £20.

The finished toerail, while not perfect, can be worked on again during the winter. Meanwhile, I am still able to sail in a dry boat.



Hardwood tightened against the rail with bolts



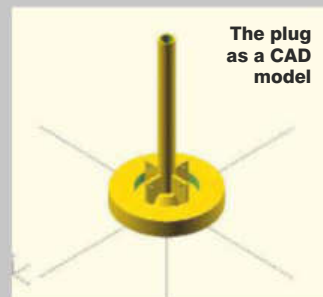
Not perfect, but a vast improvement: and it can be worked on again

Readers' Tips

3D PRINTERS: WORTH A PLUG

I recently carried out a repair to my boat using a 3D printed part in the process. There was a leak around my depth transducer housing, and I could either pay £300 to have my boat hauled out, lie alongside and let the tide fall, or effect a repair while the boat was in the water. I opted for the latter, but needed to halt the ingress of water between the housing and the surrounding GRP. I designed a plug and printed it on my 3D printer which, when inserted, stopped the ingress completely and allowed the housing to be re-glassed into the hull. With the plug installed the repair took no more than a couple of hours, and saved a lot of time and money.

Bob Haresceugh



The plug as a CAD model

AN UPLIFTING RESULT

On my 9.7m (32ft) yacht, the halyards run across the coachroof, leaving horrible dirty marks. To solve this problem I bought some 1in-diameter PVC tubing from B&Q and cut it into roughly 25cm lengths. I then pushed the resultant pipes in between the deck and halyards: by lifting the halyards they stop dirt and water getting underneath them. In total I made four 'halyard lifters' with 1m of tubing (costing about £2 per metre).

Nathan Lomas

SALT GIVES WAY TO STEAM

I own a 4hp Suzuki outboard, of some 15 or so summers. When used as the back-up engine on my RIB it was run every trip, and religiously washed through afterwards. However, when it was used as the motor for the tender to my cruiser, it could only be washed through with fresh at the end of the season.

Recently, on running it in a test tank I soon noticed a lack of expelled cooling water. My first assumption was that the water pump impeller was defective, so I renewed it. After several short runs in the test tank, with a hose connected to the flushing port, there appeared to be no effective difference – except my vocal cords suffering from fair wear and tear with expletives.

My conclusion was that the waterways were blocked with salt. As a last resort, prior to an engine strip-down I tried connecting a wallpaper stripper steam hose to the flushing



John Stevenson removed salt build-up in his Suzuki outboard with a wallpaper stripper

connection for about five minutes (just long enough for it to start burning my hands through leather gloves!) On the next pull she was away, and lo! Cooling water issued forth. Similar expletives rent the air, but in a different tone of voice.

I don't foresee having to do this on a regular basis, but it is a little trick I will keep in reserve.

John Stevenson

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Sailing Scenes

The British legions

Peter K Poland examines a rich variety of British-built 28 to 30ft cruisers built from the late '70s onwards

You only have to browse internet threads set up by sailors wondering which used cruiser to buy to get an idea of how tricky this process can be. And as time flies by and older GRP yachts keep soldiering on, the choice gets ever wider (indeed, there are too many to mention them all here).

These threads and forums do a great job. They enable cruising newcomers to plug into the knowledge of those who have been at it for decades. Many such discussions do more than just indicate the merits of different types and models; they also major on assessing the cost of replacing

items such as engines, sails, rigging etc as set against the lower purchase price of an elderly boat. It's a delicate budget-balancing act that occasionally results in a total outlay amounting to more than the resale value of the two elements combined.

Bordering, as my granny used to say, on 'good money after bad.'

If you are attracted by a cruiser with a long keel, traditional lines and easy motion in a seaway, and are not put off by a narrow accommodation with amidships heads and no stern cabin, you have little choice but to go for an oldie. Modern wide-beamed and shallow-hulled fin-keelers have effectively banished such boats from the new-build scene.

Classic style

One internet thread initiator flushed out a flurry of interesting comments, posting: 'I am looking at the possibility of a first yacht purchase and would appreciate some thoughts on the variations between a Victoria 30, a Halmatic 30 or a Nicholson 31. I am keener on the more classic style of yacht than on newer boats and want a long keel, with a view to longer or ocean trips in the future.'

The selection of these fine old long-keelers shows he has done his homework: anyone looking for a boat of this character should have them on his list. The John Sharp-designed **Halmatic 30** (and similar Barbican 30) is 22ft 10in on the waterline with a 9ft 6in beam, draws 4ft 6in, displaces 10,080lb with a 50% ballast ratio, and has a 378 DLR and 14.8 SA/displacement ratio. The Chuck Paine-designed **Victoria 30** has a canoe stern and similar dimensions but is appreciably lighter at 8,867lb with a 31% ballast ratio and DLR of 311.

Raymond Wall's classy **Nicholson 31** (30ft 6in OA), on the other hand, is a little longer, wider (10ft 3in) and heavier (13,005lb) with a ballast ratio of 37% and DLR of 411. Like the Halmatic 30, it has a transom-hung rudder, giving the look of an elegant overgrown Folkboat or Twister.

Helpful responses rolled in. One experienced sailor posted: 'I owned a Victoria 30, mistakenly sold for an unsatisfying AWB (Average White Blob), and now have a Mk2 Halmatic 30. I really like this style of boat for short-handed sailing, mainly with my wife, and mostly for coastal passages on the West Coast of Scotland. The Victoria 30 is a class act; beautifully made and comfortable. Under power, it was easier to control in reverse than the Halmatic 30, which is unpredictable – a significant consideration in a tight marina berth. Once sailing, I prefer the handling qualities of the Halmatic, which sails beautifully. All long-keelers are directionally

ABOUT THE AUTHOR



Peter K Poland crossed the Atlantic in a 7.6m (25ft) Wind Elf in 1968 and later spent 30 years as co-owner of Hunter Boats. He is now a freelance journalist.



Sailing Scenes

Halmatic 30: available second-hand from £18,500


Sailing Scenes

Nicholson 31: available second-hand from £19,995


Sailing Scenes

Victoria 30: available second-hand from £19,650


Sailing Scenes

Moody 29: available second-hand from £22,000

stable: great when on the wind, but they need increasing tiller pressure when off the wind in heavy weather. (This is separate to weather helm, which can also play a part.) I find the Halmatic far easier in this respect.'

He added that hand-steering the Victoria on long passages under sail was a strain, which was one of the reasons he sold the boat, whereas the Halmatic 30 'has nice manners going forward, is comfortable and easy to handle.

The chart table arrangement works well, there is ample locker

space and a roomy heads for a boat of this size. The Barbican 30 is a 'deluxe' version of the Halmatic 30 and even prettier outside and in. I couldn't find one when I was looking, but I think they are worth searching for. Good luck!'

And what about the Nicholson 31 (30ft 6in)? More than 100 were built, so you should be able to track one down. And there's no doubt that Ray Wall – who doesn't enjoy the fame he deserves – designed lovely yachts. The

Nicholson 31 is admired as a superb performer with a quality finish. The accommodation is pure Nicholson and excels at sea with its U-shaped galley, forward-facing navigation station, practical pilot berth and well-proportioned amidships heads. But there's one problem: owners tend to hang on to these boats forever, and the few that appear second-hand often need upgrading and refurbishing.

One response to the thread simply read: 'I can't give an

The accommodation is pure Nicholson and excels at sea

unbiased opinion, because I've owned my Nic 31 from new in 1982. She's a great boat, has sailed transatlantic (Maine to Ireland, averaging just over 5 knots for the entire, comfortable passage) and was great for living aboard for six seasons, cruising three months at a time, in northern European waters. Fabulous boat. Not for sale. You'll have to wait till I die! PS: Almost any used boat will need to be updated. Just start with a good foundation.' Which about says it all.

Thanks to the Nicholson 31 Association, I contacted Bill Roesner – the writer of this response – and he told me more about his cruise from the US to Europe. 'We had a variety of weather conditions, and the combination of full keel and great sail balance allowed the Aries to steer straight in all but the lightest air, even downwind. The Nicholson 31, being tiller-steered, is a superb single-hander, with jib sheets and mainsheet at hand

with the tiller between your legs. About two-thirds of my

time was single-handed for the next five summers, which were spent in Scotland, Norway, Sweden, Finland, Denmark, Germany, Holland, England and France.'

Condition and equipment

However, another response to this thread made the valid point that 'There are more mainstream boats available in that price range that will do anything you want to do. Going offshore is not the sole

preserve of old-fashioned-style long-keel boats. Just about any more modern family boat such as a Westerly, Hunter, Sadler, Moody or more recent Bennys, Jennys and Bavarias in the 28-32ft size range will help you learn what coastal and offshore cruising is about. The advantage of this type of boat is that it tends to be newer, more spacious, easier to handle and easier to sell when the time comes to move on. There is a much wider choice because they were made in the hundreds rather than tens. Once again, condition and equipment are important.'

This prompted a similar response from another sailor, who wrote: 'When I was looking for a boat with my father, he had his heart set on a Nicholson 31 because of the build quality, reputation and heavy weather abilities. We viewed several, and they were all similar – they needed a refit. Many Nicholson 31s will have done galactic mileage, because that's what people bought them for.

'You must consider the type of sailing you do. Long-keelers tend not to be too marina-



Sailing Scenes



Sadler 29: available second-hand from £18,500

Sailing Scenes



Sadler 290: available second-hand from £43,000

Sailing Scenes



Westerly Konsort: available second-hand from £18,950

friendly and are positively feral in reverse; but if you primarily do offshore, longer-distance stuff then the long-keeler has an advantage. However, if your sailing is mixed, a standard fin-keeler may suit your needs better. We settled on a **Moody 31** in the end and have never regretted our choice. The boat is a bit of a jack-of-all-trades and is capable of handling the rough stuff. A ballast ratio of around 37% makes her stable and quick, 7 knots under sail being fairly easy to achieve in a

decent blow. It's a well-laid-out boat and could carry two cruising couples happily for a couple of weeks. The original engine was probably over-specified for the size of boat so it pushes her along nicely with plenty in reserve for headwinds or motoring into seas. My choice would be a decent Moody 31, and avoid expensive refit bills on the other boats you have listed.'

This was just one of many plaudits I received from contented Moody 31 (LOA 30ft 9in) owners.

This Bill Dixon-designed cruiser features high on the list of popular boats of its size: construction started in 1983 and continued into the '90s with fin and twin keels on offer. A beam of 10ft 6in, weight of 9,966lb, ballast ratio of 37%, DLR of 270 and SA/displacement ratio of 15 put it firmly in the camp of modern, capable and roomy family cruisers. Despite highish freeboard, it looks sleek and well styled: and, of course, its aft

'If you primarily do offshore stuff, the long-keeler has an advantage'

heads, stern cabin and practical L-shaped galley make it a hit with the ladies. Richard Hodder confirmed this, saying: 'I bought *Eleanora*, a fin-keeler, in 1985. Why? I had always fancied a Contessa 32, but after a trial sail my wife was not impressed. Too uncomfortable! At the boat show we saw the Moody 31: my wife liked the space and comfort and it looked a good sea boat to me. Not as fast as the Contessa perhaps, but I wasn't really a racing man.'

Maybe, but the fin-keel version still has above-average performance. I crewed on a Mk1 version with good-quality sails that picked up plenty of pots in Hamble-based handicap races – and changing to a folding or feathering prop adds speed. *Eleanora*'s co-owner Paul Kennedy told me: 'Our Autoprop gives us a definite advantage and, based on experience with the two-bladed fixed prop we had

before, we achieve typically one knot extra when sailing and a better drive and a knot or more when under motor. The Autoprop has three blades and also adapts better to conditions.'

Richard also proved his Moody 31's ability offshore by joining a Royal Cornwall YC rally to the Azores.

Another owner, John Ranson, endorsed the Moody 31's qualities, saying: 'I have owned *Nakita* from new in 1990. We have sailed the local rivers and across to Holland, Belgium and France. The boat is almost a member of the family, and I intend

to keep it. It's large enough to accommodate six but can be sailed single-handed. The oversized 28hp engine will push it through a steep chop at 6 knots.

'Over almost a quarter of a century, I have discovered how well the boat has been made: it has never let me down, and I still love sailing her.'

So if you are after an all-purpose 30-footer, the Moody 31 should be on your list. Another owner, Martin Lampard, summed it up well: 'Altogether, it's an excellent, comfortable boat that has met my most important need – a contented wife – extremely well.

'I've been impressed by the Moody Owners Association's online resources: there's phenomenal content on the site and very impressive knowledge and helpful attitudes from the members. One "problem" is that I find myself looking at bigger boats, as one always does, but after ogling them a bit, I ask myself: "Yes, but what would you actually do with all that space?" Most of the layouts are basically stretched versions of the same plan we already have.'



Mirage 28: available second-hand from £8,500



Hunter Impala 28: available second-hand from £8,500

Loads of space

The smaller **29** that came out in 1980 – the last of the Primrose-designed Moodys – was a restyled development of his earlier 30. It offers loads of space below, albeit with a traditional layout of amidships heads and quarter berth aft of the chart table.

Roderick Dare – a happy owner since 2001 – told me he graduated from racing Flying Fifteens and cruising a Kingfisher and has sailed his fin-keel 29 extensively from Mylor to the Channel Isles and North and South Brittany. He once demonstrated the superior windward performance of his fin keel compared to a twin-keel Westerly Konsort on a long leg towards Presqu'île de Quiberon, saying: 'We were sailing fairly close-hauled on a port tack and were able to maintain our desired course. Our friends were constantly drifting away from the coastline and had to make starboard tacks to regain the desired course. The result was that we arrived well ahead.'

Like many who buy boats which are more than 30 years old,

Roderick has invested in additions and improvements including an electric anchor winch, a cool box conversion to a fridge, a new cooker and instrument upgrades (log, echo sounder, plotter, AIS, DSC radio etc). Also, like many others, he went to Beta for a new engine. He concluded by saying: 'We now have a safe, seaworthy boat with many qualities that suits our cruising activities.' About his only gripe is the transom-hung rudder, which he says can make steering hard work in certain

conditions, so he often uses his autopilot when on passage.

Westerly came up with one of its most successful 28 to 30ft cruisers in the '80s. More than 700 of the ever-popular Laurent Giles-designed **Konsort 29** were built, and these tough cruisers are still much sought after. Its vital statistics of 10ft 9in beam, 8,516lb weight, 37.5% ballast ratio, 229 DLR and 15 SA/displacement ratio are on a par with many of its contemporaries. The Konsort's conventional accommodation –

featuring amidships heads and aft galley and nav area – is practical and solidly finished, making it an archetypal middle-of-the-road family cruiser. And for those who prefer a deck saloon offering panoramic views from the warm and dry, the Duo version has many attractions.

Westerly Owners Association Commodore Andy Truscott sails a Konsort, and told me: 'Drongo was our third cruiser following a Falmouth Gipsy and a Mk II Macwester 27. The Konsort was spacious and comfortable enough to serve as a family boat, mostly just the two of us, but also capable of serving two and later three generations together. We have sailed her for 14 years and have never felt the need for a bigger or different boat.'

'We chose Drongo, a twin-keeler, with care: she had been maintained well from new. I ensured that we found a boat that incorporated the revised hull reinforcement system Westerly adopted after early production. Most of our sailing is by husband and wife, so we have equipped the boat to make it as easy as possible for a crew now well past retirement age. Reefing is still double line but controlled by good-quality clutches and self-tailing winches replacing the originals. We have a fully-battened mainsail and stack system and are delighted with it. To ease anchoring a power windlass is fitted, controlled from the cockpit. Needless to say, power consumption is much greater than Westerly anticipated, so an extra battery and improved charging system were essential.'

'The boat sails well provided there is sufficient breeze to get her going. A cruising chute helps in light airs. When the wind pipes up the performance is good, with a reef in the main around Force 5.'

'When buying a boat of this age, spend a bit more on one that has been sorted'

The Konsort is very much a cruising boat so we have never expected her to point high, but you sail according to the characteristics of your boat. When required, the 24hp Bukh diesel will take care of any lack of wind.

'We sail in the English Channel, the Channel Islands and adjacent coast of France, and have had no unexpected problems with the boat. Now, over 30 years old, Drongo continues to be our ideal cruising boat: a choice well made and never regretted.'

A different concept

The later 30ft 6in Westerly Tempest, designed by Ed Dubois, was a very different concept. Its unusual accommodation featured two double cabins aft and a heads compartment in the eyes of the yacht, à la Arpège. By Westerly standards, its sales total of 107 wasn't a runaway success. The 1990 Merlin 29 was a revamp of the earlier 27 (see 'Spoiled for choice, PBO March 2015).

The **Sadler 29** was another winner from the '80s. Martin Sadler says: 'The 29 appeared at the 1981 Earls Court boat show. She was offered with fin or twin keels, and the mix was about 60/40 in favour of the latter. Our demonstration boat had twins, and it surprised people how well she sailed.' (This is understandable: these twins are shapely, well positioned and draw 3ft 8in.) Martin continues: 'The design concept of the 29 was to achieve a larger internal volume for overall length than the Sadler 25 and 32, and she has accommodation very similar to the 32.'

Designer David Sadler got the balance between comfort and performance right: 28ft 5in OA, LWL 22ft 10in, beam 9ft 6in, weight 8,200lb, 41.5% ballast ratio, 307 DLR and 14.68 SA/displacement ratio. Sailors loved her, and 400 were built. Her spacious accommodation with amidships heads, good galley and chart table and cosy quarter berth appealed to traditionalists and modernists alike, and the well-engineered inner mouldings conceal enough foam buoyancy to make the boat float and sail when fully flooded.

One Sadler 29 owner summed up what to look for: 'The advice when buying boats of this age is to spend a bit more on one that

has been sorted, ie recent new engine, sails, standing rigging, cushions etc, rather than getting a

tatty boat more cheaply and then spending a fortune. To give some idea, we re-engined last year at a cost of £7.5k, including a new feathering prop (big improvement to sailing performance), and I did half of the fitting. A new main and stack pack cost £1.1k two years ago, new DIY-fitted standing rigging cost £600 three years ago, and the list goes on...

'We like the foam-filled construction, not least because it massively reduces condensation compared to





Sailing Scenes

Hunter Horizon 30: available second-hand from £21,000



Sailing Scenes

Hunter Channel 31: available second-hand from £31,900



Sailing Scenes

Sigma 292: available second-hand from £19,950



Sailing Scenes

Achilles 9m: available second-hand from £11,750

other boats I've sailed and slept on, but the downside is that the boat is rather smaller than other 29-footers down below.'

Another owner, Richard Readings, told me he and his wife regularly cruised two-up to the Channel Isles, Brittany and the West Country. He praised his twin-keeler's performance, noting that it 'made little difference when compared with a friend's shallow-keel S29, sailing in company.'

By contrast, another owner said: 'Keep her upright when sailing to windward, or the slamming of the weather keel will drive you mad.' A bit harsh perhaps, because much the same can be said of many twin-keelers when sailing well-heeled into waves.

The later Stephen Jones-designed **Sadler 290** never achieved the same number of buyers. Its builders folded after around 40 were produced, but that does not detract from this exceptional boat's performance. Both twin and fin versions have lead keels and sail superbly. If you

see one for sale, take a look: but it won't be cheap.

The **Mirage 28** is another popular fin- or twin-keel cruiser built in large numbers in the late '70s and '80s. Its 9ft 3in beam gives a spacious conventional layout below, while a 40% ballast ratio and 289 DLR ensure good stability. One French magazine tested fin- and twin-keel versions together, and was surprised at

how little the performance differed.

Alan Hollingsworth, twin-keel Mirage Mk II owner since 1986, told me: 'Having heavy shaped cast keels with a small boot at the bottom, she points well to windward for a twin-keeler and sets into a groove easily: there is very little slamming.'

'My son and I have cruised *Chinook* together since he was 10 years old: we like the way the yacht behaves in all conditions, giving a sense of safety. We both know that she will look after us even if we make a mistake.'

'We like the way the yacht behaves in all conditions, giving a sense of safety'

Sportier cruisers

And what about the sportier cruisers of the '80s and '90s? The **Hunter Impala 28** (1977 onwards) has many fans – including PBO's Ben Meakins. Designed as an Offshore One Design by David Thomas, the Impala still makes a competitive racer: but don't overlook its attributes as a fast cruiser. The interior is practical and simple:

twin-berth forepeak, enclosed heads to port amidships, galley aft of the main bulkhead to starboard and two settee berths with two pilot berths outboard in the saloon. Impalas originally came with an outboard motor in a well, but most now have inboards.

The later **Hunter Horizon 30** is an elongated cruising version of the Impala, with a new deck and counter stern. The interior is dramatically different, with twin-berth forepeak, saloon settees and aft galley, heads compartment and double aft cabin. Thanks to the superb performance of Thomas' twin keels (3ft 10in draught with bulbed bases), almost all buyers

chose this option. Its moderate beam of 9ft 3in gives good handling and its 43% ballast ratio, 234 DLR and SA/displacement ratio of 19.8 provide sparkling performance. Indeed, a twin-keeler took third overall in its CHS class against a horde of racy fin-keelers in one Round the Island Race.

If you want a beamier fin-keel cruiser-racer, the Thomas-designed **Sigma 292** is worth a look. It didn't sell in large numbers, compared to the Sigma 33, but shares many of its qualities. The Thomas-designed **Hunter Channel 31** (30ft 4in OA) is an exceptionally quick twin-keeler and a delight to sail and live aboard; but sadly, only a few were built. And finally, going back a few years, Chris Butler's **Achilles 9m** also sold well and excelled in the 1984 OSTAR, finishing in 30 days. This sporty fin-keeler has a DLR of 190, SA/displacement ratio of 15.5 and a 43% ballast ratio. A tidy example makes an excellent budget cruiser-racer.



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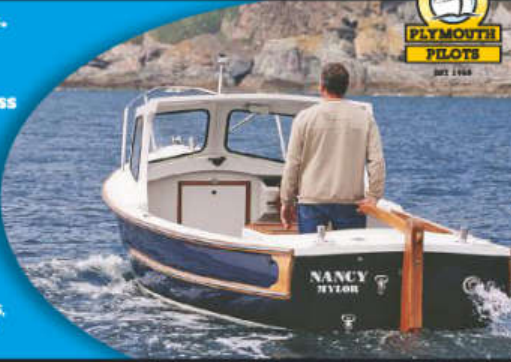
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ENGINES



www.boatgear.info

Rebecca Richards wonders how best to control a twin-engine Fairline Sunfury like this on only one engine

Going round in circles

Q While cruising in the Bristol Channel recently in my twin-diesel 1988 Fairline Sunfury I suffered a fuel blockage on my port engine, which would then only tick over at 750rpm, unable to run at higher revs. I wasn't worried – with twin engines I'd surely get home on one no trouble. Except... if I took my starboard engine above 1,200rpm the boat just went in circles, leaving me at about 5 knots with very little steerage in a large, busy shipping channel with 5-knot currents. Have you any advice how, with a twin-engine setup, you should manage on one engine? Perhaps I can make some modifications to rectify the problem should it arise again (though hopefully it won't – I've cleaned the tank and changed all the filters).

Rebecca Richards, by email

PAT MANLEY REPLIES: With only half the normal power available, your boat will not be able to get up on the plane, so maximum speed will be severely restricted – 8 or 9 knots might be all you'll manage. With the dead engine's leg in the water, there will be a lot of drag from both the leg and the prop, even if the failed engine is running at 750rpm. The boat will naturally, then, want to turn towards the dead engine.

The best thing to do is to raise the leg of the dead engine to its highest position, hopefully completely out of the water, to eliminate its drag. Then increase the rpm very slowly on the good

engine, steering as necessary to keep straight until you are going as fast as possible and still running straight ahead. In this condition, turning the boat towards the good engine will require you to reduce rpm first, so forward planning will be necessary.

To save money, manufacturers will often fit a power steering pump on only one engine, so with the 'wrong engine' failed, steering can be a problem at higher speed. Next time you are out in your boat, you could try some single engine handling practice so that you are familiar with how your boat responds at different speeds and power settings.

ELECTRICS

A fair system of charges?

Q I'm seeking an opinion on my proposal for charging batteries on my 7.6m (25ft) sailing yacht. I have a split-charge diode rated at 70A, to which is connected a 50A alternator. In order to run a peltier coolbox (as I don't have room for a compressor fridge) I intend to buy two new service batteries and connect them in parallel so that I have approximately 200Ah of capacity. Would you recommend that I connect my solar panels, two at 10W each and diode-protected from reverse current, in parallel to the split-charge diode and, when 230V mains is available, connect a 25A charger to the same place? Under normal circumstances my boat lies on a swinging mooring so mains electricity is not normally available, hence the solar panels.

Kevin Mullins, by email

PAUL HOLLAND REPLIES:

Connecting the solar panels in parallel to the input side of the diode splitter will mean that both batteries are charged when the sun shines. However, the downside is that you get a voltage drop across a diode, which will slightly reduce the voltage that the battery will see.

You don't say what voltage the panels are: if they are nominal 12V panels then they will charge a battery, but not as effectively as they would if controlled via a solar charge regulator. If you were to use that you could also operate the two panels in series, which would ensure charging continues to happen at lower light levels.

Without a regulator the output



voltage is dependent on light levels. When the light level drops the panel is still capable of delivering power, but the voltage is too low to drive current into the battery. If you put two panels in series (with a regulator) the panels will continue to put useful energy into the batteries at much lower light levels. The solar regulator has an integral DC-DC converter function that maintains the solar panels at the best operating voltage to maximise their output while (on the battery side) providing the correct charging voltage to maintain your batteries.

THE PBO EXPERTS

To ask a question email pbo@timeinc.com and include your address. Pictures are helpful



SEA SAFETY
Will Stephens is Staff Officer Operations (Coastal Safety) at the RNLI



BOAT BUYING
David Harding is a regular contributor to PBO: his photo archive is at www.sailingscenes.co.uk



CRUISING
Stuart Carruthers is the RYA Cruising Manager and has sailed extensively



SAILS
Ian Brown of the International OneSails loft group is an expert on sails



MASTS & RIGS
Mike Coates worked in the spar and rigging business for many years



SURVEY AND CORROSION
Colin Brown runs a marine survey and consultancy company, CB Marine Services



ELECTRICS
Paul Holland is chairman of the BMEA and MD of Energy Solutions (UK)



ENGINES
Pat Manley is a diesel engine course instructor and marine author

TACHOMETERS

Indulging in tach talk

Q I have an alternator pulse-driven tachometer which has five settings, none of which are anywhere close to the actual rpm of my Universal diesel. Is there a small circuit I could put in line between the alternator and the tachometer? The circuit input is the alternator tach signal, and the output would be the tachometer gauge signal. The circuit would ideally change the frequency (it'd be nice if it was tunable), and output a signal to the tachometer to give more accurate RPM indication. In my case, the tachometer indicates a bit over 6,100rpm, while the engine rpm limit is about 3,600.

Edward Stoker

Richmond BC, Canada

DAVID BERRY REPLIES:

Frequency conversion is fundamentally a difficult thing to do, particularly when the input is a varying frequency as in this case. I'm not aware of any off-the-shelf

components or circuits that will do the job: however, it is possible with an intermediate stage. When I wanted a remote tacho output on my own boat I used a frequency-to-voltage converter (an LM2917 chip) and fed the voltage output (which varies as the frequency input varies) into a microprocessor called a Picaxe. I then wrote the Picaxe software to scale the signal so that it would output a calibrated value that reflected the input frequency. If you have some software skills you could go down that route, which combines simple electronics with fine (maybe non-linear) mapping between the input and output.

Otherwise, it should be possible to use a frequency-to-voltage converter followed by a voltage-to-frequency converter with some scaling device between them, which may be as simple as a pot. It would be worth looking at the datasheet for the LM2917 or similar chips, which often include circuit designs for common

applications. There are also pre-built circuits on eBay to go from f/v and v/f, so they may help.

Some things to be aware of: firstly, the frequency range of the alternator must lie within the frequency range of the chosen circuit using sensible size components (it won't work with large-value capacitors, for example, due to their high leakage currents). Secondly, be careful of the peak voltage, which might be outside the range of the chip. My standard alternator output pulse peaked at no less than 17V!

■ Regular PBO contributor David Berry is a retired engineer with degrees in mechanical engineering and computer science. He worked for a defence contractor designing equipment for naval vessels.



SEA SAFETY

Out of range

Q What's the protocol if a small boat is forced out into unfriendly and unsafe water by firing range patrols? Can a skipper refuse to comply if he considers that his boat is unsuitable for those conditions? On a recent trip back from Calais via Dungeness to Eastbourne, I encountered a problem of this nature with a patrol boat.

David Hedley, by email

GUS LEWIS REPLIES: Most range byelaws prohibiting access to the sea area within the ranges do not apply to vessels (not used for fishing) passing through the sea area in the ordinary course of navigation, and remaining in the sea area no longer than is reasonably necessary to pass through. In other words, the range byelaws do not permit range patrol boats to prevent yachts from passing expeditiously through the sea area in the ordinary course of navigation.

I assume that the difficulty encountered by Mr Hedley off Dungeness involved the Lydd range. The Lydd range by-laws contain a provision permitting a vessel to pass expeditiously through the sea area in the ordinary course of navigation. The same by-laws request that vessels pass south of the Stephenson Shoal to avoid disrupting the firing, but this is not a legal requirement.

■ Gus Lewis is Head of Legal & Government Affairs with the Royal Yachting Association.

PAINT AND ANTIFOULING

Mooring on a freshwater lake

Q I keep a 7.9m (26ft) Dufour on Lake Windermere, and although I have taken her out of the water some winters and stored her on land for the last two years, I often keep her on the water and sail in the winter. The lake is fresh water and doesn't seem to affect the hull: the boat is 30 years old, but there is no sign of osmosis. Do you think it is ok to keep her on the swinging mooring?

David Freedman

By email

RICHARD JERRAM REPLIES: The general consensus is that vessels kept in fresh water are more prone to develop blistering than those in

salt water. However, whether kept in salt water or fresh, it is good practice not to leave vessels in the water year-in year-out, but to take them out at least every two years to allow the hull an opportunity to dry out. For blistering to occur, hydrolysis usually has to take place within the laminate. In simple terms, this is where water reacts with certain elements within the hull which are susceptible to moisture. As your Dufour is now 30 years old and isn't showing any signs of blistering, there is a strong possibility that you will remain free of this problem. However, allowing the hull to dry out will be beneficial, and a course of action I would recommend.

50 of the most frequently asked boating questions are answered by our experts on the PBO website. Visit www.pbo.co.uk



GAS FITTINGS
Peter Spreadborough, of Southampton Calor Gas Centre, has 20 years in the industry



PAINT AND ANTIFOULING
Richard Jerram is former UK technical manager of International Paint



YACHT DESIGN
Andrew Blyth is a naval architect with interest in stability and buoyancy



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Gary Sutcliffe of Lee Sanitation knows about holding tanks, toilets and plumbing



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Colin Haines is a design engineer who has trailer-sailed for 25 years



ELECTRONICS
Chris Ellery of Greenham-Regis Electronics is a former Merchant Navy officer



BOATBUILDING
Tony Davies has been building and repairing wooden, GRP and steel boats for 40 years



WOOD
Richard Hare is a wood technologist and long-time wooden-boat owner

SAFETY AT SEA

Making all the right connections

Q I have just replaced my danbuoy, horseshoe lifebelt and light. I could connect all these items together as they were in the original installation, but I wonder if that is the best solution? If they are all connected together, then for as long as one of the items stays attached to the boat, whatever has already been released into the sea is simply being dragged through the water, potentially taking it out of reach of the casualty. Obviously, if any item gets jammed, the benefit of the whole arrangement is negated as it follows the boat rather than remaining in the water near the casualty.

Now, if the items weren't connected together, the crew on board could systematically eject each of the three: the danbuoy simply dropped into the water, the horseshoe lifebelt thrown to the casualty and the light unit thrown in his or her general direction. (I'm suggesting that order because it reflects the increasing distance between casualty and boat.)

It may be that I am simply questioning an arrangement that has already passed into disuse, but if that is the case, why are these safety items continuing to be sold with loops for attaching lines? And one final thought: with all these lines in the water, there must be a very real risk of lines being tangled around the keel, rudder or even the propeller.

Ian A McColl, by email

KEITH COLWELL REPLIES:

Unless you are sailing under ISAF racing regulations, there are no hard and fast rules about how you set up your MOB gear. So it's best to look at the function of each piece, and when and how you are going to deploy them, before deciding which items should be linked or not. I would suggest joining the lifebuoy to the lifebuoy light – and adding a drogue – but not the danbuoy. In addition, I would also recommend adding a rescue sling and throw-line to your boat's equipment. Of course, other measures can also be taken, such as using an EPIRB, PLB, AIS



The horseshoe lifebelt and light (circled) are linked on board *Hantu Biru*

personal rescue beacon, handheld VHF DSC and day/night flare to help raise the alarm and locate the MOB.

Five key extra points to remember:

- Fit the danbuoy on the starboard side of the stern since a SAR helicopter winch-man will always enter the cockpit from the port quarter.

- Mark all buoyant fittings with your boat name or call sign. If they are found, they can be used to help in calculating the MOB's location – but only if they can be identified as coming from your boat.

- Add retro-reflective tape to floating items (lifebuoy, danbuoy and even the light) – it makes them much easier to see in the beam of a searchlight.

- Regularly practise the MOB manoeuvre and your preferred recovery method with your crew.

- Best of all – don't fall in. Clip on with a safety lanyard the right length to prevent going over the side.

■ Keith Colwell is the RNLI's Community Incident Reduction Manager.

SAILS AND RIGGING

Can I reef from the cockpit?

Q Two years ago, I bought a Fantasia 27. The mainsail reefing is a system I had not come across before: I have to go up to the mast and take out sliders from a cut-out in the mast.

These are normally prevented from falling out by a plastic catch blocking the cut-out. Once I have taken out two sliders in the case of the first reef, I can then put the cringle onto the horn. It's a right mess of a procedure to return to the cockpit and haul in the main halyard sufficiently to keep the cringle on the horn, then go back to the mast to winch in the reefing lines before finally returning to the cockpit to tighten the main halyard.

Is there a way I can bring the lines back to the cockpit with this mast arrangement? I sail single-handed 99 per cent of



The mainsail reefing system on Colin Paterson's *Fantasia 27*

the time, and ideally I would prefer to stay in the cockpit and not have to venture on deck at all.

*Colin Paterson
Isle of Bute*

MIKE COATES REPLIES: It should be possible to alter your system so you can control the reefing from the cockpit. You would have to fit turning blocks on the deck for each boom reefing line so it can be led aft to a suitable jammer or cleat. The reefing hooks for the luff cringle would be dispensed with and replaced with tack lines: the bitter end of the line would run from an eye on the mast level with or just below the gooseneck on one side and through a similarly-placed bull's eye on the mast on the other side. This would lead the line to a deck turning block and aft to the cockpit: the bull's eye and fixed eye near the gooseneck would prevent the tack line and cringle eye riding aft when the reef is pulled down, ensuring foot tension is maintained. A separate tack line would be required for each reef. Hopefully if using tack lines there would be no necessity to



Stainless hooks welded onto the reefing horns secure the cringles

remove the sliders from the mast as the sail is lowered to put in the reef.

As an interim measure, fitting a tight piece of flexible polythene tube onto the reefing hook just touching the mast will prevent the reefing cringle falling off while you winch in the reef before reapplying halyard tension. Alternatively, if you decide to keep the current reefing system you could improve it by having spring mallion hooks welded to the reefing hooks to clip onto stainless rings secured with webbing through the reefing cringle eyes.

Renovating boat windows

Stephen Wallace demonstrates how he went about removing, resealing and reinstalling the windows on his 25-year-old Sadler 32

Leaking windows, drips and dampness are not fun on a boat: children complain, 'other-halves' become potentially mutinous and life becomes generally unpleasant every time it rains. Dampness pervades, and token attempts to put off the inevitable eventually expire in their effectiveness. Having tried silicone sealant, Captain Tolley's and other alchemic remedies, the plain facts become clear: the butyl sealant has irreparably broken down, and it's time to reseal the windows properly.

Our Sadler 32 is now 25 years old. Having initially tried quick fixes, we found that they may buy you a season or two, but resealing the glass and re-bedding the frame is the only real answer. When we eventually cleaned out the frames prior to resealing the glazing, we found the old butyl to be completely



BEFORE

The butyl sealant had irrevocably broken down

shot, ranging in texture from mainly flexible rubber at the top of the window to hard black and porous Crunchie-bar texture at the bottom.

Good value

We've now discovered the considerable length of time it takes to remove, disassemble and clean the frames and glass, insert the



AFTER

Seal of approval: the resealed, leak-free windows

glazing butyl with sufficient pressure and finish/cure them – all in all, about 10 days. I'd heard good reports about Eagle Boat Windows, so I contacted them for advice on materials and details of how to do the work properly. (Their alternative service of professional resealing on behalf of owners is extremely time- and cost-effective, enabling you to concentrate on

the removal and reinstallation of the windows.) We ordered a kit from Eagle which included glazing primer and 2kg of two-pack butyl glazing sealant, two tubes of Arbomast BR butyl sealant to bed the frames, gloves, rubber chocking for the glass, scourer pads and a small plastic tool – all for just over £80 including p&p, which seemed good value.

TOP TIP

Boat window refurbishers (eg www.eagleboatwindows.co.uk) often have lots of information on their websites and are happy to supply further info/advice with their sealant kits

▼ TOOLS FOR THE JOB



The Eagle Windows kit (gloves and chocking rubber not shown)



The removed windows, and the tools used in their removal

Removing the window frames from the boat

The window frames on our Sadler 32 were very well stuck in with silicone, so our somewhat painful experience removing them may be a great deal less arduous for you if you decide to tackle the same job

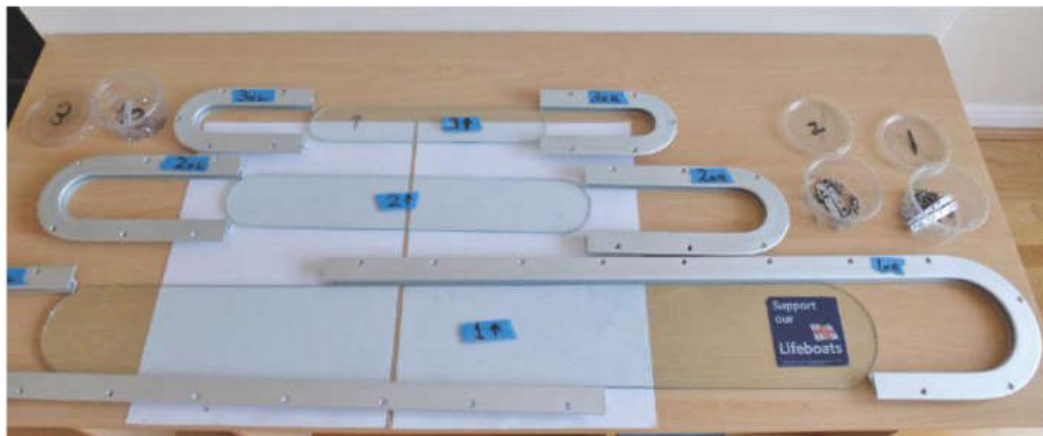
You'll need a screwdriver, lots of stripping/filler knives with good spring steel (enabling them to bend), sharp Stanley knife blades/similar craft knives, blue (14-day) masking tape and some duct tape.

On the outside of the boat, use blue masking tape to individually mark each frame component and glazing pane with the window number, orientation and whether it's left or right (ie 6L↑). It seems obvious, but when everything comes apart this is all you'll have available to ensure accurate reassembly.

Our window frame section is a small 'h', with the upright of the 'h' forming the flange against the boat – this is normally the only part bonding the frame to the boat. Unfortunately ours had been bedded both on the flange and also the 'reveal' return into the boat, against internal GRP surround mouldings. To make matters worse, the bedding was silicone rather than butyl sealant, making the frames seemingly impossible to shift.

The good news was that the frames were held in by self-tapping screws rather than inter-screws, so as they were removed they went into individually-labelled clean hummus pots, as did later components.

To remove the frame I first carefully cut the silicone sealant internally with sharp blades at the window/GRP frame moulding interface, some areas being too tight to reach at this stage. Then I went around the exterior of the frame edge with both narrow and wide stripping/filler knives, progressively cutting into the silicone. Initially this cut was to a



The frame components individually marked up with masking tape, which will stick when wet



Several scrapers were used in tandem and leapfrogged around the frame



A duct tape 'loop' saved a resounding crash as the window popped out!

TOP TIP

It's very easy to damage the external hull GRP surround to the frame by being overenthusiastic with the filler knives. Use a couple of pieces of masking tape on the knife itself about 2cm back from the blade edge, or mask the hull with tape to act as a sacrificial layer.

very shallow perimeter depth, but became progressively deeper as I worked around the frame.

The process is basically one of attrition, alternately cutting around the frame from inside and then outside. There comes a point when you can get the stripping knife into a gap and, using a light mallet, can carefully cut all the way through to the frame, progressing all around. Greater

speed can be achieved by leapfrogging the most effective filler knives (often narrow and thin-bladed) and leaving several others in their place progressively around the frame perimeter, gently breaking the seal with the hull.

By rigging up a couple of 200mm pieces of duct tape outside the boat in a small loop from hull to window frame I was able to increasingly move the window frame, but avoided a nasty crash when the windows eventually popped out after gently pressing the frame from inside the boat!

The boat hull can be made watertight by using polythene sheet held in place by duct tape, which is messy to remove, or blue masking tape (which is better) to

create temporary glazing. If you're doing the work at home, take some old dust sheets to wrap the frames in for safe transportation.

In terms of time taken, our first batch of three windows on the port side took a day, and a lot of sweat, to remove. The silicone was tenacious, and at times I wondered whether the frames would come out at all. This experience enabled the second batch of three to be removed in about five hours, so overall you could say frame removal is a two-day job. Yours will hopefully come out a lot more easily if they have butyl frame sealant and are not stuck on the 'reveal' as ours were.



The 'h' section of the window frame



Self-tapping screws and frame holes need cleaning too

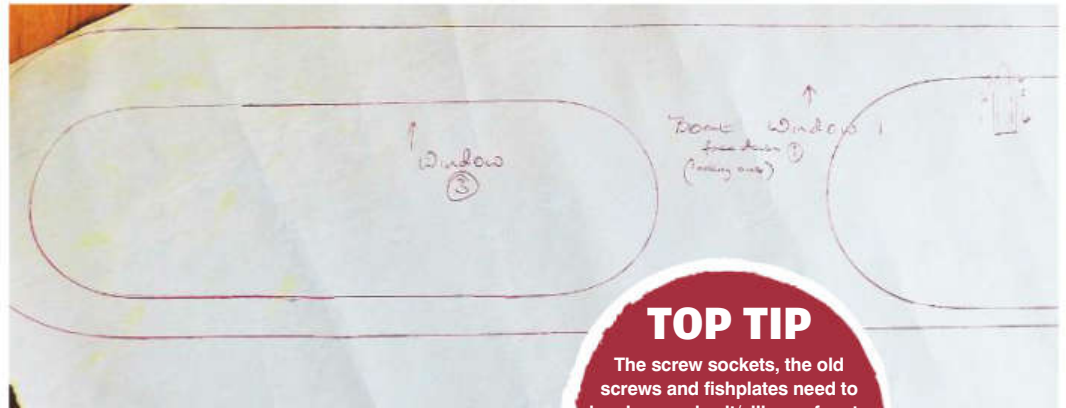
Dismantling and cleaning the window frames

Make sure you have screwdrivers, plastic scrapers, gloves, snipe-nosed pliers, blades, a butyl kit, a suitably prepared work surface, hot soapy water, white spirit and a piece of wallpaper to hand!

Before dismantling anything, lay all frames face-down on a piece of wallpaper and stencil around them. Mark the stencil with orientation and window number. Note the difference in width between the stencil line and the frame itself. When you eventually reassemble them you will then have an accurate guide to the original width, enabling any necessary light clamping to realign them while the butyl is fresh, ensuring accurate alignment of screw holes when remounting back onto the hull. This is particularly important for larger frames.

For the next stage you'll need screwdrivers, plastic scrapers, gloves, snipe-nosed pliers, blades, butyl kit and work surface protection. White spirit and meths now became our best friend: they are very effective. White spirit and paraffin will not dissolve cured silicone, but once most of the sealant has been removed with a blade they will soften the remaining residue, making it more susceptible to removal with a blade/plastic scraper.

With the frames now free of the boat, the real work began: cleaning and disassembling them prior to resealing the glazing. Our aim was to ensure all surfaces were clean and free of oil/silicone so that the primer and butyl sealant could bond properly to both frame and glass. Cut into the butyl all around the frame perimeter on both sides with a new Stanley knife blade. The butyl



Stencilling the frames with orientation and frame number

TOP TIP

The screw sockets, the old screws and fishplates need to be clean and salt/silicone-free to create a leak-free seal when reassembling. Hot soapy water followed by gentle abrasion can be used to clean these.



Cutting into the old butyl with a sharp blade

may be very hard, so white spirit can help soften it. Do this several times to full depth so the glass is released from the frame.

Our channelled frames were in two halves held together by fishplates – thin strips of metal located in the bed of the channel held by screws through the frame.

These need to be released to get the frame apart. After mounting the frames in a workbench, the fishplate screws need to be removed from at least one side – not necessarily easy as a result of the unholy marriage of stainless steel screws and aluminium frames!

Take care not to damage the anodising, distort the frame or break the glass when clamping, so use an old cloth for protection. Carefully clamping the frame enables you to get real pressure and turning force on the screwdriver without the head jumping. Pre-treatment with penetrating oil and hot water may help to dissolve the salt/oxide build-up and expand the aluminium.

Next we separate the two frame halves. Clamp just one end of the frame, so the other end is free to move. Wrap a piece of strong, thin material (eg polyester) around the end of a preferably rounded filler knife, then insert this between the



Separating the frame halves which were held together by fishplates

frame and glass at the end of the frame. Using a mallet, gently knock the two halves apart, taking care not to distort anything.

To clean out the frame channel use an old, long, narrow screwdriver to dig out the old butyl, then plastic scrapers and finally a Scotchbrite pad together with plenty of white spirit. Clean the glass and its edges. As our frame progressively became cleaner I used a combination of washing in hot soapy water, Cif, white spirit and finally meths to ensure a clean surface. I also tried using a chemical that is supposed to dissolve cured silicone, but in my experience it was either totally ineffective or had an effect of about 1 out of 10.

The hull window opening needs to be as clean as the window frames, so I used a variety of tools and several home-made perspex scrapers (which proved invaluable as they didn't scratch) in conjunction with white spirit and Cif.



Cleaning the glass and edge using hot soapy water, white spirit and Cif

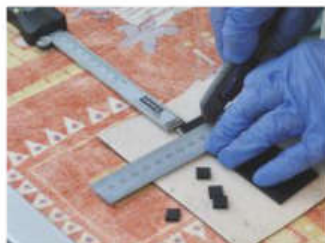
Resealing the glazing into the frames

Starting now with chemically clean frames and windows, it's time to start reassembling everything. Drawing a quick 'chocking' diagram for each frame may well prove invaluable as a reference source

As a dry-run, first reassemble the glass into the frames with the fishplates fixed on one side only, and determine how much channel-chocking rubber is needed by inserting it into the frame channel base around the glass perimeter to provide about 1-2mm of movement of the glass within the frame. This may take several attempts, and is likely to involve either single or double thicknesses of rubber: ensure they are cut generously to hold themselves tightly in place.

For the channel-base perimeter chocking rubber, cut the rubber strip into 8-10mm-wide blocks the (tight) width of the channel and about 1cm long, using a caliper depth gauge as a template guide to ensure lengths are accurate. Fit to the frame as necessary. Check against your stencil of the original frame size and make sure any cramping leaves some movement.

Try to ensure the glass is central and clear of the fishplates. I drew a quick 'chocking' diagram for each frame, which proved a useful reference when one or two of the earlier frame chocks dropped out during handling before application of the butyl. When satisfied with the fit, do a final assembly by putting some butyl sealant bedding compound onto the cleaned fishplates and mitre joints then screwing together. The frame can be left overnight, then cleaned up with a blade dipped in white spirit.



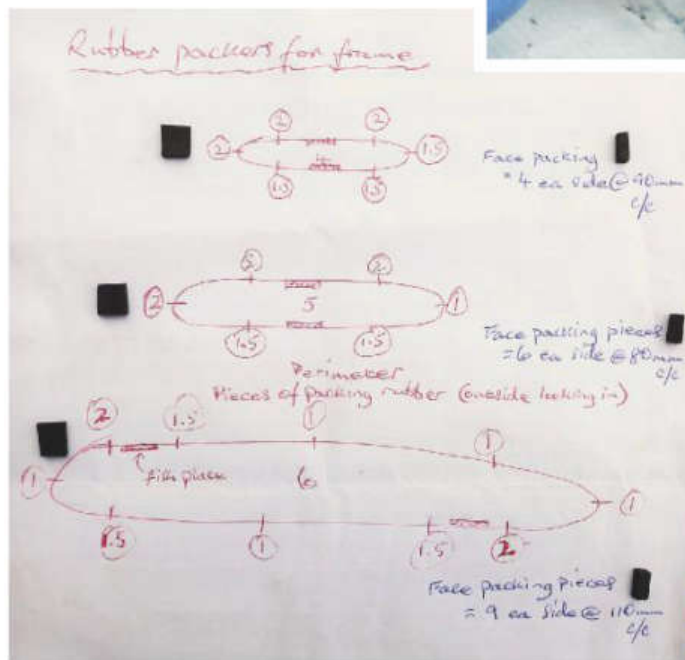
Cutting the chocking rubbers



The chocking rubbers in place in the base of the channel

For the internal glass face chocking rubber, cut short lengths of rubber about 5mm wide and the depth of the channel less about 4-5mm, so when the glass is inserted it will be supported in its internal vertical face but have sufficient 'cover' of butyl glazing sealant. I added the number of chocks per side and spacing to the chocking diagram: a useful guide later when inserting the butyl.

Use a small (say 1/2in) brush to apply primer to the inside and outside faces of the frame/glass



We drew a rubber chocking piece diagram for the glass and frames

interface, then set aside for over 30 minutes (but less than 8 hours) prior to filling the frame with two-pack butyl. This butyl has one black and one white component, in our case 1kg each. The white is like a dryish putty and can be cut easily, but the black component is rubbery and deforms before it cuts. I therefore found it easier to measure these by weight before mixing. Wearing gloves, mix these stiff components in equal quantities by twisting and kneading until the marbling becomes a consistent black colour: no need to rush, it cures in days rather than hours.

Lay the frame down with the outside face up and firmly insert the butyl into the frame, using a strong rotating action to maximise pressure until it can be seen filling the bottom channel of the frame. Clean off the excess. Turn the frame over, face down, and carefully press the glass down to create a new

void all around the frame into which the internal vertical face chocking rubber is inserted at intervals of roughly 75-125mm. These are pressed in below the frame edge but still support the glass: make sure they don't rotate by using a flat rather than rounded pushing tool.

If you have done the 'face-up' butyl filling properly these will bed into the butyl at the bottom of the channel. Now force butyl into this side, working around the frame and taking care not to create voids, then chamfer/radius the edges to lap the frame using any convenient tool or knife (clean-up is done some days later). Turn the frame over and chamfer/radius the face-side butyl.

While the butyl is fresh, check the frame dimensions against the stencil of the original frame and cramp if necessary. Set the frames to cure, undisturbed, in a warm place for at least a week before cleaning with a soft cloth and white spirit.



A fishplate covered in sealant, prior to assembling a frame



Filling the face side with two-pack butyl, using a strong rotating action



Pressing the glass down created a new void all around the frame



Smoothing a radius into the butyl edges with a knife



The frame was cramped to the original dimensions on the stencil

Bedding the refurbished frames back into the boat

Finally, the frames are re-bedded back into the boat hull. We prepared each frame for installation using one-pack butyl sealant, which is essentially non-setting and can be cleaned up easily with white spirit

First, check the fit of the window and alignment of screw holes in the hull opening: thankfully all our screw holes lined up correctly.

Despite our careful stencilling, some of the hull window openings still needed a couple of mm of easing to enable the frames to fit back in. I therefore made a small tool to hold abrasive sheet from a 10cm block of wood and some old aluminium tile trim, which happened to be the same depth as the frame. Any additional making-good of the opening was also carried out at this stage.

Our windows have a slight curvature, which immediately straightens when you remove the frame from the boat. There is therefore a tendency for the central section to be compressed, squeezing out any sealant and potentially giving rise to future leaks. This didn't seem an attractive proposition after all the hard work, so to avoid this I decided to incorporate small rubber spacers made of some Firestone EPDM roofing material I had been given. It was just over 1mm thick and was bedded in the same butyl sealant a day in



The frames were inserted to check fit and hole alignment

advance of installation. Note that this is a non-standard procedure: however, reading the PBO forum, some other people feel spacers are desirable.

Each frame was prepared for installation using Arbomast BR (one-pack) butyl sealant. This versatile material is intended for

'covered' sealing applications and is essentially non-setting, apart from an external skin which forms to a stiff chewing-gum-like consistency after a day or so. It cleans up easily with white spirit.

Cut the butyl nozzle at 45° and apply a 6mm bead of bedding compound on the inside of the window flange in line with the screw holes, forming a doughnut shape around the screw holes



Thin EPDM sheet roofing packers (bedded in butyl) were used to avoid butyl sealant squeeze-out



An 'easing' tool, about 10cm long, adjusted the hull window aperture



A 6-7mm sealant bead was applied in line with the screw holes, forming a doughnut shape around the holes themselves

themselves. Use a little more if incorporating spacers.

Present the window to the hull the right way up and gently press it against the hull, which will create a 'witness' around the perimeter. Remove any initial sealant appearing in screw holes in the frame before the screws are inserted, otherwise a hydraulic build-up of pressure in blind-ended holes or inter-screws can occur. However, you may also wish to put a little sealant around the neck of the screw to ensure an effective seal. Carefully tighten the screws, working around the perimeter of the frame, doing this in rotation several times until only a small gap remains between hull and frame. The butyl should not be squeezed out completely or it will leak. Screws should only be 'nipped up', not fully tightened. Leave for a few days to harden, then trim using a scraper and white spirit.

So that's that job complete. It took longer than expected, but will hopefully mean we're watertight for another 25 years. Now, let's see about re-bedding the hatch!



One of the window frames, cleaned up and reinstalled

LESSONS LEARNED

1 Window refurbishment is a lengthy and labour-intensive job taking around 10 days (excluding curing time) for six windows: just cleaning the frames took two days.

2 Use a professional resealing company's services if time is tight; this then enables you to concentrate on removal/reinstallation.

3 The two types of butyl were pleasant but messy to work with – prepare!

4 Your technique will improve as you do more windows, so do the job in a couple of batches.

5 There's more to this job than meets the eye, but it's well within the capabilities of a practical boat owner!



7 MOB boarding ladders



Alex Bell and a PBO test team try out a range of emergency boarding ladders to assess how helpful they are in enabling MOB casualties to climb back on board

THE PBO TEST TEAM



Ex-merchant navy officer Alex Bell sails a Bénéteau First 305 and lectures in maths and engineering at Southampton Solent University.



Alan Watson is an ex-merchant navy radio officer and a Yachtmaster with commercial endorsement, and runs a 12.8m Nelson 42 powerboat.



Oksana Razina works at Southampton Solent University and is a club racer of yachts in the Solent in the role of navigator.

There are a number of emergency situations that are important to plan and train for on board boats and ships, particularly abandon ship and man overboard (MOB). If the real situation were to arise, training could mean the difference between life and death.

For this test, we focus on one piece of kit designed to get a man overboard back onto the boat by climbing up a ladder. Once a man-overboard situation has occurred, a quick reaction by the helm is necessary to stay in contact and return to the MOB, minimising their exposure to cold water. In this situation, assuming the MOB is conscious, he or she should be able to climb up a ladder. The key factor is speed of

recovery, and a ladder permanently attached to the pushpit that can be instantly deployed would be a valuable asset, especially in a short-handed boat. Some boats have bathing ladders attached to the stern that can be used for the MOB to climb back on board, but some sterns do not lend themselves to such ladders: and in certain waters they provide a potential route (when at anchor) for unwelcome visitors to climb aboard the boat.

A recent quick survey on the River Hamble revealed that many cruisers have MOB recovery bags attached to the pushpit: these include a life sling designed to be towed behind a circling vessel until the casualty grabs it, whereupon he/she is pulled alongside and can then be

hoisted on board with a halyard on a winch or block and tackle. An emergency ladder is an alternative solution where there is no other means of recovery immediately available.

What is available?

We found seven emergency boarding ladders in two designs – rigid step or mesh. Most of the devices tested fit into a bag or pouch, which is kept closed by a Velcro fastening. The exception is the Osculati Flushmount emergency ladder, which is designed to be recessed into the boat's transom in a tube.

The step types feature a set of rigid steps suspended by tape or line, while the mesh types have a two-foothold-wide flexible mesh and are therefore wider than the solid step ladders. The devices



Our 'MOBs' all wore typical onboard clothing, including shoes



The test team found some ladders much easier to use than others

are either designed to be attached permanently ready for use like the rescue slings, or stored in a position where they can be quickly deployed. Some (the Kim Safety Ladder, Lalizas Safe Up, Markus Emergency Ladder) come with buckles so they can be attached to a handrail: the remainder (Osculati emergency ladder, Plastimo Safety Ladder, Waveline Help Ladder) come with two attachment tape loops which require a secondary attachment method.

Rescue scenarios

A ladder will only work for a fit person who is able to climb: it won't work if the casualty is unconscious or too weak from exposure. It could be very effective for a boat on a mooring or at anchor if someone falls

overboard, perhaps in the middle of the night. To be of use to the lone sailor, it must be capable of being deployed by the MOB. For light-handed crews under way, being able to concentrate on steering the boat back alongside the casualty without having to forage for the rescue ladder offers a great advantage.

How we tested them

We berthed my Bénéteau First 305 alongside the inside of Warsash Sailing Club's pontoon in the River Hamble. The ladders were attached in appropriate places, and our test team entered the water and tried the ladders out. When appropriate, a different location or height was tried. Our 'MOBs' wore typical onboard clothing, including shoes. All wore a buoyancy aid.

MOB ladders on test

Waveline Help Ladder

PRICE: £31.75

Contact: www.marathonleisure.co.uk

This comes in three lengths; three, four or five (as tested) steps. Two web loops are provided to attach the pouch at deck level. The short pull handle releases the Velcro closure to allow the ladder to fall out of the bag. The five semi-circular steps are broad and are supported by plastic side tubes through which the webbing straps are threaded. Two lead weights ensure the bottom step sinks. Additional fastening is required, eg snap shackles to attach to the toerail or another convenient strong point: we used shackles to attach the pouch to the toerail.

The first tester broke one of the steps, but the others stayed intact. Another ladder was tested later and performed satisfactorily, so the first failure was put down to a manufacturing defect. The bag handle was not strong enough to use as a pull-up sling as the webbing does not extend to the attachment loops. One tester successfully climbed onto the boat in the first test, despite the broken step.



ABOVE A short pull handle releases the Velcro closure.

RIGHT The steps are supported by side tubes through which the webbing straps are threaded



Osculati Flushmount

PRICE: £34.95

Contact: www.force4.co.uk

Offering a totally different solution to ladder storage, the Flushmount fits into a polyamide tube and has a flange with a protective cap. The ladder is designed to be mounted on the transom and would only be suitable for, say, a sugar scoop stern or a power boat bathing platform as the mounting position must be low enough to reach from the water. The ladder has three 140mm-wide polypropylene steps attached to a polyester line. An additional stainless steel pipe acts as a handhold.

On test, the end cap was found to be stiff to release until it was greased with silicone. No tester was successful in climbing aboard solely using the ladder, but success was achieved with a sling attached to the backstay to pull upon.



ABOVE The Flushmount fits into a polyamide tube and has a flange with a protective cap. **RIGHT** The mounting position must be low enough to reach from the water



MOB ladders on test

Osculati Emergency Ladder

PRICE: £34.95

Contact: www.force4.co.uk

This is designed to be fastened directly to the pushpit by the line that supports the ladder steps. A red strap attached to the protective covering, secured by Velcro, releases the ladder and allows it to unroll. The strap hangs down one metre from the bottom of the pouch, but could be shortened to a convenient length. The steps are very broad and semi-circular, which made them comfortable on test.

The ladder rungs are supported by three-strand polypropylene line: the two ends have to be threaded through the top of the pouch and then attached to the boat. We felt the line would have benefited from being longer, and tied the ends to the toerail for the test. Two testers were able to climb out of the water, and found the steps easy to use.



ABOVE A red strap releases the ladder and allows it to unroll. **RIGHT** The ladder rungs are supported by three-strand polypropylene line



ABOVE The Safe Up has a bottom step which acts as a pull-handle. **RIGHT** The ladder's webbing straps are reinforced for the rungs



Lalizas Safe Up

PRICE: £39.95

Contact: www.force4.co.uk

Designed to be stored on a handrail, the Safe Up has a bottom step which acts as a pull-handle to be grabbed and pulled by the person in the water. When the handle is pulled, the Velcro closure releases the ladder. The pouch opening is well finished with stitched tape. Three webbing straps with stainless steel buckles are used to attach the pouch to the rail: these allow some variation in height. The ladder has webbing straps which are reinforced for the rungs and arranged as a 2 x 5 matrix: a last broad rung hangs approximately 700mm from the attachment rail.

On test, the pouch was straightforward to attach to the guardrail and the handle was reachable from the water. Two testers were able to climb up the ladder, but it wasn't easy. The rungs, made of stiff webbing, weren't as easy to engage as the Kim or Markus ladders.

Kim Safety Ladder

PRICE: £42.95

Contact: www.oceansafety.com

This is designed as a pull-down ladder which can be reached from the water. Three straps with plastic snap buckles enable the pouch to be attached to a handrail. The ladder is made from polyester webbing and packed into a compact white PVC bag. A further strap with a red plastic handhold, the bottom rung, extends down from the pouch to facilitate deployment from the water. The webbing rungs are covered in red plastic and arranged as a 2 x 9 mesh. A strong aluminium bar links the ladder to the attachment straps, and the pouch has a Velcro closure.

On test, the pouch was quick and easy to attach to the pushpit rail, but the buckles were too big for the toerail. Climbing a mesh ladder is a bit of an acquired art, but two of the three testers were able to climb back on board. The plastic-coated rungs were easy to see under water and the weighted bottom rung kept the ladder in position.



ABOVE Three straps with snap buckles enable the pouch to be attached to a handrail. **RIGHT** A weighted bottom rung kept the ladder in position



PBO emergency boarding ladders team test at-a-glance

Manufacturer	Kim	Lalzas	Osculati	Markus	Osculati	Plastimo	Waveline
Model	Safety Ladder	Safe Up	Flushmount	Emergency Ladder	Emergency Ladder	Safety Ladder	Help Ladder
Weight (gm)	800	785	316	760	700	800	1,210
Length (m)	2.4	2.15	1.1	1.7	1.34	1.32	1.34
Number of treads	10	5	3 + handhold	7	4	4	5
Max load	175kg	230kg	Not specified	500kg	Not specified	Not specified	Not specified
Pouch size (mm)	415 x 150 x 50	365 x 120 x 50	L 230 x dia 55	435 x 180 x 45	300 x 220 x 65	280 x 190 x 50	300 x 180 x 80
MRP inc VAT	£42.95	£39.95	£34.95	£104	£34.95	£66.18	£31.75
Supplier	Ocean Safety	Force 4	Force 4	Energy Marine	Force 4	Bainbridge Int	Marathon Leisure
Website	Oceansafety.com	Force4.co.uk	Force4.co.uk	Engmar.com	Force4.co.uk	Bainbridgeint.co.uk	Marathonleisure.co.uk

Plastimo Safety Ladder

PRICE: £66.18

www.bainbridgeint.co.uk



Two versions are available, four steps (as tested) and five. It's not designed for permanent deployment on a guardrail as the grab strap isn't long enough. Ideally it would be attached at toerail height, perhaps while on a mooring. Two webbing loops are provided to attach the pouch: these would require a lashing or snap shackles, and a short webbing loop then attaches to the Velcro closure. Four 170mm-long broad plastic steps are then released, secured by nuts, bolts and washers to two yellow webbing support straps.

Attachment requires shackles or snap shackles to the toerail. From this height, the bag handle could be reached and the ladder deployed. All testers successfully boarded the boat with this ladder: Alan would have preferred the five-step model and wider rungs. The flat steps were easy to use, 'good and solid', and the bag handle affixed by webbing to the attachment loops can be used to pull on, greatly assisting the process.



ABOVE Two webbing loops are provided to attach the pouch. **RIGHT** Plastic steps are secured by nuts, bolts and washers to two webbing support straps



ABOVE Web straps secured with stainless steel buckles attach the pouch to a rail. **RIGHT** We first tried the ladder on the bow, but later in its proper position on the quarter



Markus Emergency Ladder

PRICE: £104

www.engmar.com

Designed for both leisure and work boats, the Markus comes in four lengths, from 800mm (model tested) to 2,200mm. Choice will depend upon the distance from the fastening point to the water. The ladder is a 2 x 5 mesh with a common lower step which acts as the bag grab handle. The mesh rungs are reinforced internally with stiff plastic, and the bottom rung has an orange luminous cover. Three webbing straps are deployed to attach the pouch to a rail, and are secured with stainless steel buckles. A strong aluminium bar links the ladder to the attachment straps.

Attachment to the guardrail was straightforward using stainless steel buckles. The grab handle was reachable. Alan would have preferred a longer model with a lower bottom step, but the weighted lower step was generally appreciated: two out of the three testers successfully climbed back on board.

PBO verdict

There is no doubt in my mind that practice makes a great difference to climbing out of the water using these ladders.

Alan was able to deploy all the ladders from the water – and this would require an appropriate attachment height for a lone sailor's arm reach – but only succeeded in climbing aboard with the Plastimo ladder. 'The advantage is with shorter, lighter and fitter people,' he observed. 'Being tall, my knee was under my chin with my foot in the lowest rung, which made it hard to straighten up. The only way I could do it was by grabbing something above me and hauling as well as pushing. Without anything to grab, no chance. Weight and upper body strength

count: I have too much of one but not enough of the other, and I'm not untypical for my age.'

Oksana managed to climb them all except the Flushmount and Help Ladder, and Alex successfully climbed them all except the Flushmount, which we felt had very limited applications. It could assist climbing onto a bathing platform, but for general use it requires an additional pull-up handhold positioned higher up the transom.

Ladders must be long enough for a tall person to be able to stand on the bottom rung without having to lift one foot up too high. Deploying the ladder on the pushpit gives the casualty something to hold onto once they get some way up the ladder. Getting your body in a vertical

position was essential. As Alan added, 'Most of the ladders were too short: they need three or four rungs in the water, and it would be better if the rungs were weighted and sank. Being able to see the rungs helps: the one that broke was grey and invisible in the water. It's quite tricky getting your foot on the first rung, and not being able to see it was a hindrance.'

There is no doubt that the ability to pull with one's arms greatly facilitates climbing the ladder, and just as liferafts make use of an internal ladder to pull up on, these ladders would benefit from a similar device. However, technique is also important, and this is where training and practice come in.

Generally, the ladders with the

rigid steps were easier to climb – the wider the better. The mesh types required a technique to access the next tread as you ascended. Of the mesh ladders, the Kim, Lalizas and Markus are all well-made products, but the Kim represents the best buy because it is very easy to attach and reasonably priced.

Of the stepladder type, the Plastimo was the only ladder all our 'MOBs' could climb and so it gets our best buy award. It would however benefit from a weighted bottom step and attachment buckles rather than slings.

■ Thanks to Warsash Sailing Club for the use of their pontoon and excellent shower and changing room facilities.





The bonnie Clyde



Sam Llewellyn and fellow sailors in a small Shrimper and Corribee flotilla are 'satisfied whate'er may betide' on a River Clyde cruise

Over the years, the small Shrimper and Corribee flotilla of which I am a member has stuck its noses into just about every loch and cranny north of Kintyre. This year, someone said we ought in fairness to have a look at the Clyde. So there we were in hospitable Kip Marina, Shrimpers on the slipway and my Corribee (once known as 'that eBay boat' but now rechristened *Surprise*) alongside the pontoon, ready for the off. The sun was shining out of a clear Scottish sky. Only a pessimist would have pointed to the low line of blue-black cloud on the horizon to the northwest.

The Firth of Clyde was cool and grey. We broad-reached southwest, wakes roaring, past the lighthouse on Toward Point and rusting iron jetties left over from World War II. We paused opposite Rothesay for lunch, following a long-established routine: put down an anchor on a short scope, dive below and make the toast on which the lunchtime sardines will repose,

eat lunch, up anchor and away. It all went fine except the up anchor bit. Haul tripping lines as we might, motor in circles as we would, curse as we certainly did, the hook refused to come back aboard.

Shortening up as far as possible, we got out the bolt cutters and snipped ourselves free, leaving the faithful Bruce to sleep with the fishes. Then we sailed away up the East Kyle of Bute, installing the spare anchor as we went. The chart, consulted later, mentioned that the lunch spot was littered with underwater obstructions, having been used for the construction of oil rigs in the 1970s. There was probably a moral in there somewhere.

The Kyles of Bute, which separate that island from the mainland, make a charming waterway. They are flanked by green fields on which red cattle stand artistically distributed and large houses sitting in spacious grounds, giving them in places the air of a northern Maidenhead. PocketGrib, this year's chosen weather forecasting tool, showed the breeze going into the northwest and freshening. We

made our way through the Burnt Isles, where a large quantity of tide was writhing around the islands (rates are said to reach 3 knots at Springs) and into a sheltered bay. The anchors went down, on to mud this time, and the corks came out. A cuckoo burbled on the shore, and among the islands fleets of eider ducks said 'ooh' in the manner popularised by the late Frankie Howerd. The sun dipped below the horizon. It was all very peaceful.

A deep depression

The next morning's Grib download indicated a change. A deep depression was spinning towards the north of Scotland, bringing rain and gales with some north in them. The problem east of Kintyre is that the waterways run north and south, and there is a marked shortage of hurricane holes. The fleet therefore proceeded down the West Kyle, hung a right at the big red can buoy, and beat up for Tarbert, which has the closest thing to all-round shelter available in these parts.



Running to Tighnabruaich



Surprise approaching Lamlash

We picked up moorings in the Deuchlands, a tree-lined annex to the harbour. The sun went down pale and wan. In the night the breeze started shrieking, and machine-gun bursts of rain rattled on the coachroof. Next morning the flotilla moved from the anchorage into the marina, and went walking up the hill above the fish quay, entering thick cloud at about 80ft. By evening we were bored and wet, but the glass was rising. Next morning, the grim-faced conference decided, we would get out, weather or no weather.

The rain had stopped, and as we motored out of the marina the approach channel was calmish. Out at sea, though, white horses were jumping. We pulled down two reefs each. The first puff hit with a bang, and *Surprise* heeled steeply as she smacked the first of the seas galloping up the long fetch between the island of Arran and the Mull of Kintyre. The breeze was about a point free, and we sailed full-and-by for Ardlamont Point, rockhobbling wildly in blasts of spray, full of wild glee. (A yacht we met later

later told us that the gusts were 30 knots, Force 7).

At the point we bore away, shook out the reefs and roared up the West Kyle on a dead run, mast clanging as the squalls thumped in. In Loch Riddon the breeze went flat, lost in a complication of hills. As we ghosted over smooth water under the windows of a junior Balmoral, a little arrowhead snaked across the surface. Suddenly the world was roaring, and the deck had changed from horizontal to vertical, and I was standing on the downhill side of the cockpit, water pouring over the lee coaming, thinking, well, at least it's not going into the cabin. Then the puff was gone, and the cockpit was draining, and I was taking off sail as fast as I could go.

The sun came out. The eider ducks came back on song. The flotilla had a party, then sailed back to Kip, hauled out their boats and departed south. The weather

had gone lightish and northerly, so it seemed a pity to stop sailing. So I bought a new anchor (a Kobra, highly effective so far) and headed south too, broad-reaching under a hail of gannets to Great Cumbrae.

The islands of the Clyde seem to have a talent for collecting religious enthusiasts. The tiny but perfectly formed cathedral on Great Cumbrae is Church of Scotland, built by a 19th-century Earl of Glasgow keen to keep the Episcopalian end up in the face of Presbyterian competition. Its 123ft spire rises from the woods behind the solemn grey town of Millport, whose horseshoe-shaped anchorage, with plenty of visitors' moorings, provides excellent



One of the Cornish Shrimpers in blasts of spray, 'full of wild glee'

shelter from breezes from WNW round to ESE. I was idly admiring the view over the stern when I noticed something like a corkscrew in the foreground. Close inspection revealed this to be part of the backstay, whose lower split portion, worn by years of tightening, was stranding and breaking out of its swage. The mast could have come down any time yesterday. After some calming deep breathing, I effected a jury rig with several yards of Dyneema and set off for the decidedly non-picturesque Largs Yacht Haven a couple of miles across the water. Here the resident rigger made a new backstay section with cheerfulness and skill. Having paid his tiny bill, I pointed the boat's nose at Arran.

At the beginning of the cruise there had still been snow on the island's jagged upper slopes. As *Surprise* reached out of the channel between the mainland and Little Cumbrae (another island given over to religious practices, this time Hindu in inspiration) the breeze was a mere zephyr from the northwest, and Arran's snows had gone. The island is a big one, but short of anchorages. In fact the pilot book is snuffy about all except one, between Lamlash and Holy Island (Buddhist, by the way). So it was for the two humps of Holy Island, some 15 sea miles distant, that I steered.

Frosted and white-capped

The zephyr became a breeze. The breeze became a wind. Soon the sea was kicking up, frosted and white-capped in the gusts. *Surprise* trucked mightily on under reefed main and full genoa. A couple of container ships surged by, then a tug, throwing a huge wake. The wake combined with the seas in a manner doubtless understandable by students of fractals, but not by me, and suddenly a black slope had piled up behind the boat, and *Surprise* was sliding down it on wings, I tell you, of spray. Another came, and another. The GPS said 12 knots, and I was singing Surfin' Safari, looking round for the next wave, and saw the following.

Across the sea to the north there was steaming a big, rusty fishing boat. I had seen it already, and noted that it would pass well to port of my boat and another



Lamlash bathed in early morning sunshine

small yacht that seemed to be on the same course as me. Now, though, the fishing boat had altered course towards the small yacht, and looked as if it was right on top of her. I opened my mouth to yell, saw the rusty side of the fishing boat loom over the small boat, saw the yacht shouting something, and then, to my intense relief, saw the fishing boat slide by the small yacht, its trawl lines slicing the seas like cheese wires three feet ahead of the yacht's bow. A tragedy had been averted, just. And there was no question that it had been the fishing boat that had altered course, endangering the yacht. I went back to see if the yacht was all right. The helmswoman said she was. She was laughing so much she could hardly talk.

Surprise sailed on across the wind, blowing Force 6 now. Ailsa Craig stood hazy on the southern horizon. A dot in the sea off Claughlands Point grew to a crumb, from a crumb to a square, and became a red can in the North Channel. And into the great flat sheet of Lamlash harbour swept *Surprise*, losing way in the

lee of the land. The visitors' moorings were all full, but a local refitting a Nantucket Clipper pointed me at a private mooring whose owner was away. Whisky went down, followed by spaghetti.

Wild and fine

At four in the morning the water was like glass. I sat and watched a yellow half-moon rise over Holy Island. After breakfast I dropped the mooring and headed north. It was a whole-sail reach to Glencallum Bay, a tiny wild notch in the extreme southern end of Bute. The wind died as *Surprise* ghosted in, past the drying rock on the eastern side of the anchorage, dropped an anchor, blew up the dinghy, rowed ashore and climbed the hill above the harbour. The Firth of Clyde lay spread below, wild and fine. The sky was dusted with mares' tails and mackerel scales, and on the horizon to the northwest a blue-black line of cloud was forming. It was time to go home.



I have a cunningham plan

You can immeasurably increase your sailing pleasure by fitting a cunningham to your mainsail, advises Bob Goode

I do not claim to be any kind of wizard at sail trim but, like many sailors, I do enjoy at least trying to get a well-set sail. When my new mainsail arrived it came with a cunningham cringle, so it was natural that I would read up on how to use it.

Put simply, the cunningham line adjusts the tension in the lower third of the luff and is used to move the draught of the sail forward or aft to suit changing wind conditions. Tension on the line flattens the sail and moves the draught forwards. While you can also do this by increasing the halyard tension, the halyard will act on the upper third more than the lower third due to friction in the sail sliders. A cunningham can be rigged quite quickly using a short line, cleated at the mast and leading up and through the cunningham grommet.

The tension is applied to the cunningham using a simple block and tackle fastened between the line and a suitable point such as the vang fitting. If you want to get really serious, lead the line back to the cockpit and a suitable winch and jammer. If you have the grommet in the sail already then set-up costs are minimal as most of us have odd lengths of line and blocks which are suitable.

In light airs, you want a fuller sail with the draught of the sail aft, so take all the tension off the cunningham and ease the halyard a little. As the wind rises, the mainsail needs to be flatter and the draught needs to come forwards. This is where the cunningham comes into its own. Simply cranking the main halyard on will only result in changes at the top of the sail. Applying tension to the cunningham will flatten and move the draught forwards in the lower part of the sail, so combining both halyard and cunningham tension gives both a sail better shaped to the conditions and a boat which carries less weather helm, sailing flatter and faster. Oh, and you get that racing yachtsman look as well.



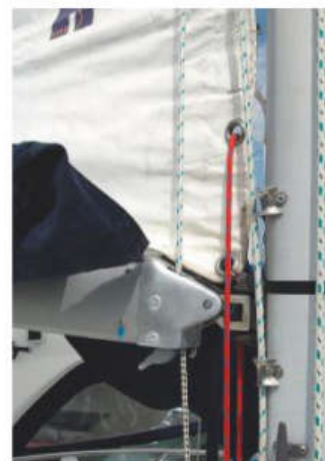
The red cunningham line is led from the vang fitting up and through the cunningham cringle, then down to a block at the base of the mast and back to the cockpit



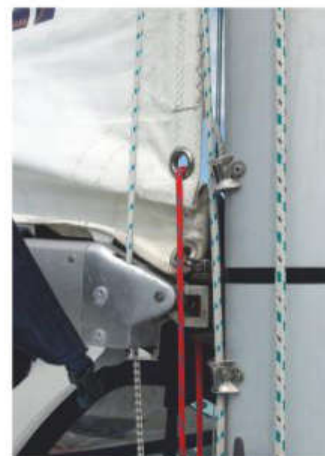
Here's a simple fix using a short line cleated on the port side of the mast and passing through the cunningham cringle. Tension is applied using a simple tackle cleated on the starboard side



You can have endless hours of fun tweaking your cunningham and changing the shape of the mainsail to suit the wind...



The cunningham line passes through the cunningham cringle just above the tack of the mainsail



This is the effect of applying tension to the cunningham line

FURTHER READING

Illustrated Sail & Rig Tuning by Ivar Dedekam, Fenhurst books. An easy-to-understand guide to trimming sails and rig tuning.

Yachting Monthly Sail Power by Peter Nielsen, Adlard Coles Nautical. A more advanced guide to getting the best from your sails.

North U TRIM by Bill Gladstone, North U. This book is part of an excellent series on sail trim for those who really want to get the best from their sails.



Whether it's to cope with electronics failure or simply to make the most of your surroundings, David Pugh shares some traditional pilotage tips to help you obtain and maintain a fix of your position

Fixing your position at sea has never been easier. Early GPS revolutionised navigation by giving a read-out of latitude and longitude, which you could plot on your paper chart.

Now, that position is displayed on highly detailed electronic charts and, providing the electronics keep working, you can arrive at your destination

simply by placing a few waypoints and following the screen.

This technology has made the sea both safer and more accessible, but traditional navigation and pilotage techniques still have a place in modern sailing. A classic example is our recent cross-Channel voyage with *Hantu Biru*, during which we followed a compass course, allowing the ebb and

flood tides to cancel each other out over the course of the passage. This is significantly quicker than following the GPS track, by which you could easily sail many miles further than necessary.

Closer inshore, it's worth being aware of the different techniques available to help you gain and maintain a fix of your position without satellite assistance. The

main reason is that it makes you independent of the electronics should they go wrong, but I would argue that using landmarks for navigation makes you more aware of your surroundings – surely a good thing in a sport that's all about enjoying the great outdoors – and adds an extra level of challenge which can be fun.

Getting a fix

The key to navigating without GPS is to be constantly on the lookout for opportunities to get a fix. On passage with GPS, we become used to being able to note down our lat and long in the log once an hour, regardless of the conditions. Without it, you may find that there are no suitable landmarks on the hour, or that the visibility has reduced. If you see the opportunity for a good fix, take it: knowledge is power.

That vigilance means being creative. There are a host of ways to use landmarks to give you a position, and the technique you use will vary according to the circumstances. The simpler the fix, the better – if it takes you an age to work out a bearing, chances are it's not that accurate.

The traditional navigator's toolbox



MUST-HAVES: Dividers • Breton plotter/parallel rules • Ship's compass • Hand bearing compass • Log • Echo sounder/lead line • Charts • Almanac • Pair of compasses • Pencil



NICE-TO-HAVES: Sextant (plastic is fine) • Station pointer • Pelorus • Radar

Eight traditional ways to get a fix

1. Charted object



One of the easiest ways to fix your position is to sail up alongside a charted object. Buoys are the obvious choice, but remember that they can be relocated, especially in areas of shifting sand or mud banks. Keep your charts up to date, and where possible choose an object firmly fixed to the seabed. Grab your chart, make a cross next to the object, note the time and log reading, and you're done.

2. Transits



Transits are formed when two charted objects are in line. They are often found marked on charts, or in pilot books, to give a clearance from a danger or a safe entrance into port.

A single transit provides an accurate line of position and gets you halfway to an accurate fix – you just need to find where you are on the line.

3. Crossed transits



The best way to find your position on a transit is to find another one which crosses it, ideally at about 90°. This is a tremendously accurate way to fix your position, but you generally need to plan the fix beforehand, so it's often used to give an accurate fix for starting a passage.

The easiest way is to find charted transits, or objects on the chart which form suitable transits. Then, to get to the planned position, pick up one of the transits and sail along it until the other transit marks come into line.

4. Transit and bearing

In the absence of another transit, a bearing on a fixed object provides a good fix. Again, try to choose an object which lies at roughly 90° to the transit – shallow angles of intersection create greater errors.

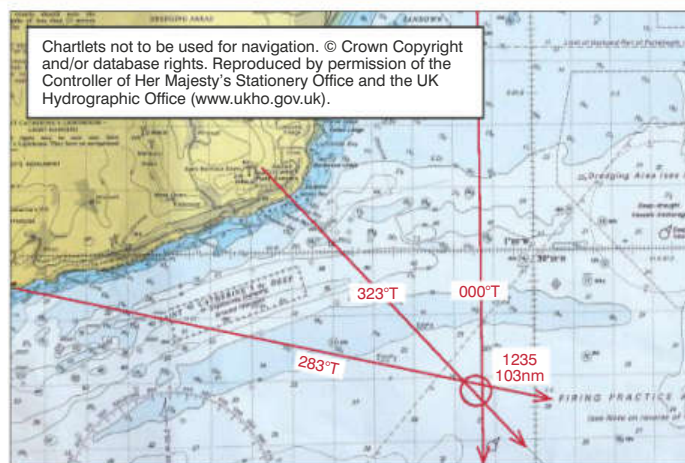


A river entrance transit crossed with a bearing at roughly 90°

5. Three-point fix

This is the classic classroom technique for fixing your position. Choose three charted objects, maximising the angles between them to minimise error. Lighthouses and buildings are the ideal choice as they don't move and are easy to sight through the compass. Headlands can be good, but shallow promontories are harder to accurately sight than steep cliffs. Buoys can be used, but remember that they move on the tide.

Take your bearings as quickly as possible, noting them down as you go and leaving the one most abeam until last – this bearing changes the fastest. Then plot them on the chart. Unless you have a stationary boat and extraordinarily steady hands



the lines will not intersect perfectly, instead coming together in a triangle called a 'cocked hat'. Your

true position could be anywhere within this triangle, so the smaller it is, the more accurate your fix.

6. Sounding crossed with bearing

The echo-sounder has of late become simply a tool to prevent you running aground, but in conjunction with the chart it can be a useful source of position information.

To use the echo-sounder for position, you need to know the current height of tide. For coastal passages at low speeds it's enough to choose a port close to your planned route and work out the height of tide for each hour as a quick reference. Armed with this information, you can pick up depth contours as you sail towards the coast. To pick up

the 5m contour, for example, add 5m to your predicted height of tide, then sail in until the echo-sounder reaches the required depth.

Once you are on a depth contour, take a bearing of a charted object: your approximate position will be where the bearing and the contour intersect. A depth contour is unlikely to be completely accurate, especially if the chart is based on an old survey, so treat positions obtained this way with care. If possible, another intersecting bearing will add accuracy.



A depth contour may be the first useful position line available when making landfall

Eight traditional ways to get a fix continued...

7. Running fix

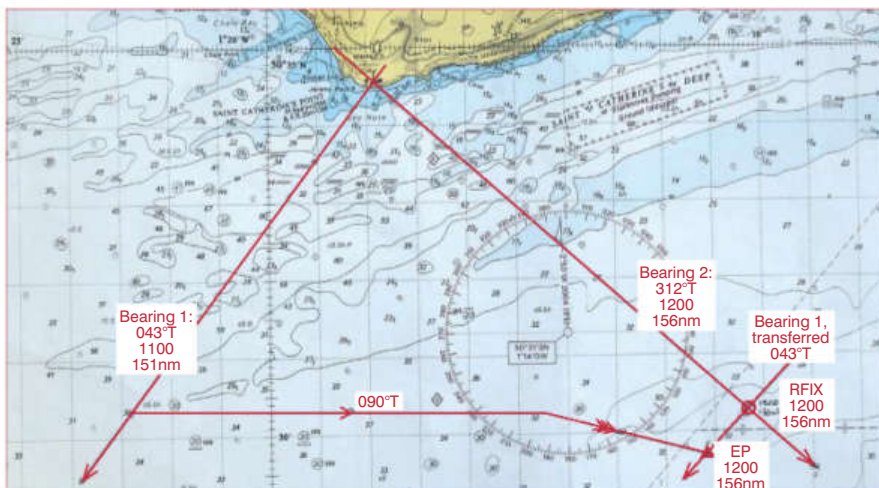
If there's only one suitable charted object in sight, and you can't determine your range using a depth contour, given time you can find your position using a running fix. This is often the case at night, when your choice of objects from which to take bearings are limited to those that are lit.

This method is most appropriate when you are

sailing more or less parallel to the coast. Take a bearing on the object when it is approximately 45° on the bow. Plot the bearing on the chart, and mark it with the time and the log reading.

Sail a constant compass course for a time, typically until the object is around 45° astern. Take another bearing, and plot it on the chart with the time

and log reading. Then, from any point on the first position line, follow the procedure for working out an estimated position (EP), using your logged distance and the predicted tidal set and rate. From your EP, draw a line parallel to the first bearing. The point where the two bearings intersect should be your current position.



The running fix is not particularly accurate, but provides a useful fix if landmarks are scarce

8. Double the angle on the bow

A special case of the running fix, this method relies on the fact that an isosceles triangle has two sides the same length, with the larger angle being double the smaller ones.

To use this, pick an object which is less than or equal to 45° off the bow. (A pelorus is a great help with this technique, as it accurately measures angles relative to the boat's heading.) Note the object's relative bearing and its compass bearing. Plot the compass bearing on the chart, together with the time and the log reading.

Sail on a constant course until the angle off the bow has doubled. Note the new compass bearing and the log reading, and plot them on the chart. Your position is on the position line drawn, and your range from the object is exactly the same as the distance logged.



The pelorus is used to take relative bearings, useful for methods such as doubling the angle

Navigating at night

The techniques above can also be used at night providing the landmarks are lit, but there are a couple of techniques using lighthouses which are only valid at night.

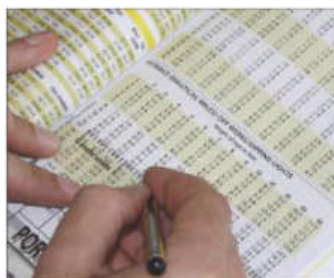
Dipping distance crossed with bearing

On a clear night, the distance at which a lighthouse beam first becomes visible can provide a surprisingly accurate calculation for your distance off. To work it out, you need to estimate the height of your eye above sea level, calculate the height of tide and find the height of the lighthouse.

The latter is easy. On the chart, a lighthouse will have a legend something like FI(3).15s13m20M, telling us that this is a white light which emits a group of three flashes every 15 seconds, has a height above Mean High Water (MHW) of 13m and is visible for 20 miles in a straight line in clear conditions. This latter figure is of no practical use in navigation other than giving

an idea when you should begin to see the light when approaching the shore, as it takes no account of the Earth's curvature. The figure of interest is the height of the light above MHW: 13m.

To calculate your distance off, calculate or estimate the height of tide, subtract it from the value for MHW (available for the nearest port by consulting the almanac), and add the result to the charted height for the light. Estimate the height of your eye above sea level. Then, find the table for calculating dipping distance in your almanac and cross-reference your height of eye with the



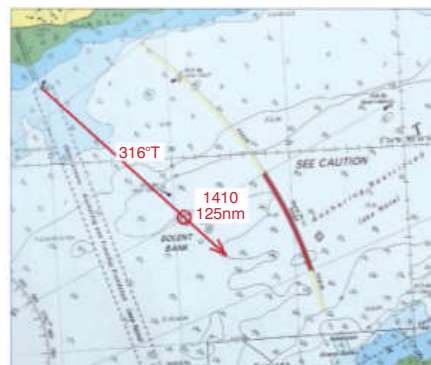
Dipping distances are easily calculated with almanac tables

(adjusted) height of the light. This gives your distance from the light. Take a bearing on the light, draw it on the chart and strike off the dipping distance with your compasses or dividers.

The advantage of this method is that it gives a fix from a single object. However, it can only be used in good visibility.

Light sector cut-off

Sector lights are common on the approaches to harbours, or on headlands where rocks project in a particular direction. The cut-offs between the coloured sectors are marked on the chart, and when viewed from the sea are very abrupt, making them a good position line for navigation.



Light sectors have cut-offs which make good position lines. A cross bearing gives a fix

The cut-off line needs to be crossed with another range or position line to give a fix. A bearing on another light is ideal, or if you are on the dipping range for one of the sectors that will give a range. Another option is to use your echo sounder to find the depth, correct it for tide and cross the depth contour with the light sector cut-off to find your position.

Using radar

If you have radar on board, it can be a powerful tool for positioning as well as collision avoidance.

Using the VRM/EBL

All radars are equipped with a variable range marker (VRM) and an electronic bearing line (EBL). These allow you to obtain an accurate fix from a single object. Placing the electronic bearing line on an object will give you its bearing, relative to the ship's head, and the VRM will give its range.

By adding or subtracting the bearing from the compass course, depending on whether to object is to starboard or port, and correcting for deviation and variation of the ship's compass, the bearing can be drawn on the chart and intersected with the range to give an accurate position by day or night.

Crossed radar ranges

Another way to obtain your position by radar is to use the VRM to find the range of two objects (Racons are ideal). This avoids any calculation at all: simply find the two ranges and draw them on the chart with a pair of compasses, using the charted object as the centre.

The resulting circles will intersect in two places, giving two possible positions. However, it's usually obvious which is correct – the false one is often on land! If there is any doubt, a rough bearing will clear up the ambiguity.



Intersecting ranges give two positions, but it's usually clear which one is valid

Using a sextant

The sextant is usually thought of as only suitable for astro-navigation, but in fact it is simply a highly accurate means of measuring angles. As nearly all pilotage involves plotting angles, a sextant can be a powerful tool to help obtain an accurate fix.



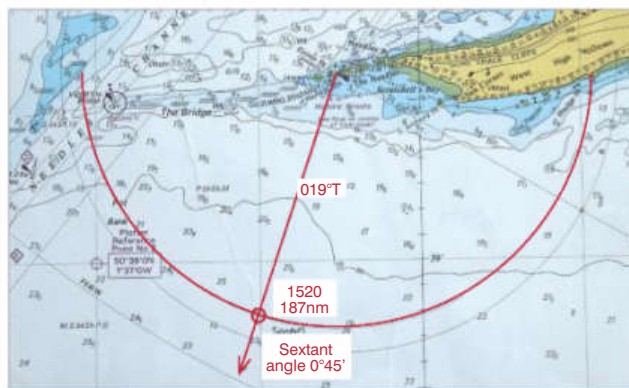
Distance off by vertical sextant angle

Similar to the technique for finding your position using a dipping distance, you can calculate your position by

measuring the angle between sea level and the top of a charted object of known height, such as a lighthouse. Using the

sextant, bring the top of the lighthouse down until it is touching the sea, and read off the angle.

In this case, it's acceptable to approximate your eye as being at sea level, and therefore the distance off is the stated height of the object above sea level, corrected for tide, divided by the tangent of the sextant angle. Divide by 1852 to get the distance in nautical miles. A useful approximation is $1.856 \times (\text{Elevation} \pm \text{water height}) / \text{Sextant angle in minutes}$. Some almanacs have tables to assist this calculation. Once obtained, this range can be crossed with the light's bearing to give a fix.



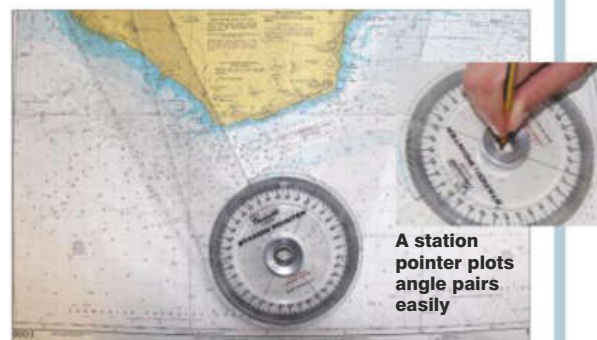
The sextant gives a range, which can be crossed with a bearing

Horizontal sextant angles

A more accurate variation of the three-point fix, in this method you use the sextant to measure the two angles between three onshore objects.

You then plot these on the chart. The easiest method is to use a station pointer, which has three arms – one set at zero, and scales to set the other two at relative angles either side. With the pointer set up and laid on the chart, there is only one orientation at which it fits, so the centre of the scale gives your position.

This method is more tolerant of small angles than a hand-bearing compass.



A station pointer plots angle pairs easily

PBO conclusion

The above methods are not the only techniques available, and often it pays to be creative in their use. For instance, a single position line, while not a fix, can still be useful as it can be transferred using your distance run to help find a hard-to-spot object onshore,

such as the mouth of a river.

Using these techniques challenges your seamanship and hones your skills in recognising and using landmarks. It puts you more in touch with the sea and reduces your dependence on electronics. Above all, it can be fun. I'm not suggesting that you should ignore the GPS, and in

conditions of reduced visibility many of these techniques become impossible. But the art of sailing a boat is more than getting from A to B; it's the art of making best use of what nature is offering in terms of winds, waves, tide and landmarks, and that's what traditional navigation is all about.

Laura Hodgetts reports on the latest marine products

Digital Yacht Sonar Server

Sonar Server is Digital Yacht's low-cost wireless gateway from your boat's NMEA depth instrument or fishfinder to a smartphone or tablet running the Navionics charting app. The app now features the ability to redraw bathymetry based on live data streamed from your boat's system.

With Sonar Server installed, every trip you make will see traditional charts redrawn in real-time to reveal hidden depth contours. When you return ashore, and your smartphone or tablet has an internet connection, data is anonymously uploaded to the Navionics server for reprocessing. An algorithm compares and validates data and allows a new 'SonarChart' to be created, which is then available for all to download next time they update charts in their apps. This process typically takes a couple of weeks.

Sonar Server costs £99.95.

■ www.sonarserver.com



■ Navionics' SonarChart Live functionality has also been added to the Raymarine Dragonfly 4 and 5 PRO and Wi-Fish systems. Raymarine customers can connect these devices with the Navionics Boating app using Wi-Fi to create and view a personal HD bathymetry map in real time while navigating. The new chart appears as an additional layer over an existing map, while the details are saved and stored on the mobile device for continued private use, and can be edited and refined over time. Available on Apple iOS devices and Android.

Raymarine users can take advantage of the split-screen fishfinder view within the Navionics Boating app, enabling them to display charts and CHIRP DownVision in the palm of their hands. A conventional sonar fishfinder view is also available when used with Dragonfly PRO models.

■ www.navionics.com/sonarchart-live

■ www.raymarine.com

Garmin's latest offerings

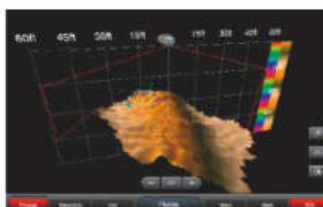
Garmin's recently-launched **GHP Reactor Autopilot Series** with 9-axis AHRS, developed originally for Garmin's aviation autopilot, is designed to mount nearly anywhere and in any orientation, promising ease of use and safety while minimising set-up and commissioning time.

Garmin's large-format marine instruments – GNX 120 and 130 – display more than 50 marine and boat parameters for wind, sea and vessel conditions, with 70mm digits that are the largest in class. The instruments allow sharing of sailing data between Garmin devices and are controlled from a compatible GNX keypad.

Garmin's Panoptix All-Seeing Sonar is a multi-beam transducer that uses phased-array scanning sonar technology, designed for near-shore or freshwater fishing. The technology gives mariners the ability to see all around a vessel in real time, even while the boat is stationary.

The GHP Reactor Autopilot Series starting price is £1,374.99; the GNX 120's starting price is £749.99; and the GNX 130's starting price is £1,249.99, as is the Panoptix All-Seeing Sonar's starting price.

■ www.garmin.com



AntennaPRO Short Active Three-Frequency NAVTEX Receiving Antenna

Specially designed for Navigational Telex (NAVTEX) receivers, an automated system used to transmit navigational alerts, weather warnings and urgent safety and rescue information, Procom's new NTA 3E-SHT Short Active three-frequency antenna receives on the three NAVTEX frequencies 490kHz, 518kHz and 4209.5kHz.

Band-pass filter-based tuning circuitry optimises the antenna for the NAVTEX frequencies and protects from possible interference. The antenna is 530mm in height and weighs approximately 350g. The RF ground is internally AC-coupled to the mounting bracket to prevent electrolytic corrosion. The antenna, priced at £195, is promised to be simple to mount using the 1in revolving nut system: a variety of accessory mounting brackets and a junction kit for easy connection to the receiver and DC power supply are available, but not included. ■ www.procomuk.co.uk



Icom IC-M25 Marine VHF



Icom's new marine VHF radio floats and flashes when dropped into the water. It weighs just 220g, and a USB connector enables charging from a variety of electronic devices. Available in metallic grey or marine blue, the IC-M25 has a screen which is 30% larger than its predecessor to enable you to clearly see the channel number and status icons. The IC-M25 allows up to 11 hours of operating time. With its BC-217 charger, the radio can be charged in three hours, and 550mW of audio output is promised to make the radio easy to hear even in stormy conditions. You can also change background noise levels to make the incoming message clearer. An optional HM-213 waterproof speaker microphone is available. The IC-M25 costs £149.99.

■ www.icomuk.co.uk

Coast PolySteel LED torches

Coast's new PolySteel range combines a stainless-steel core with a lightweight textured polyresin coating: the torches have been tested to withstand a 3m drop onto concrete. As well as being impact- and crash-resistant, the PS torches are waterproof to 3m, heat- and dust-resistant. They come with a lifetime warranty.

The 13cm-long PS200 offers a pure white LED beam, which can be focused, and has three power levels: High (250 lumen, 121m beam for 3.5hrs), Medium (87 lumen, 68m beam for 9hrs), and Low (26 lumen, 37m beam for 35hrs). It uses 3xAAA batteries and is priced at £24.95.

The higher-specification PS400 measures 15.24cm and costs £28.95 with 300 lumens of light output, 194m beam distance and a 1h 30mins runtime, while the PS600 measures 20.32cm and retails at £34.95 with 620 lumens light output and a 2h runtime and 234m beam distance.

■ www.nauticalia.com



PBO
TESTED



Colapz bucket

Similar in style to canvas buckets, the Colapz bucket is designed to twist down flat and stay that way, with a sturdy elastic strap that keeps it flattened and doubles as a handy hanging loop. Made from recyclable plastic and available in a range of vibrant colours, the bucket has a 10lt capacity. It is promised to be safe for carrying food and drink, UV-resistant so it won't dry out or fade in summer, frost-proof so it won't crack in winter, and non-marking. At full size, it measures H25cm x W22cm x L22cm: when collapsed, the height is reduced to 6cm. The bucket is priced at £9.

The Colapz range also features a collapsible watering can, a 2-in-1 watering can/bucket and the new Colapz liquid carrier with a 9L capacity, which includes a dispensing tap and incorporated level indicator (all £29).

■ www.colapz.co.uk

Ursuit thermal heating vest

The Ursuit FIR Deep Heat System is designed to stay warm for between three to five hours. Promised to be ideal for cold night-time passages or sitting on the rail during a freezing winter race, the lightweight, battery-controlled vest is designed to be safe and warm even if the vest becomes fully immersed in water.

The system consists of a fleece vest, three thermal pads, battery and charger: heating power can be set to three different levels and, depending on the level selected, the battery lasts between three to five hours. The warming effect of the vest is based on FIR (far infrared ray) radiation: FIR radiation reaches in the region of 3-5cm into the body and is said to last longer as it heats blood circulation and muscles. This should help keep your whole body warm, not just the part touching the heat source, so your fingers and toes don't stay cold. Priced at £299.

■ www.andark.co.uk



Verdict

I was expecting the bucket to collapse mid-use, but to my surprise it is quite rigid. It did a great job cleaning a conservatory! The Colapz bucket is now folded up neatly back in the cupboard, ready for its next use. The only complaint is my husband wasn't happy carrying the hot pink bucket. Recommended.

Jane Smith



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NASA Target Echo Sounder

The Target Depth sounder (pictured right) was launched in November 1992 and sold in the thousands over the next nine years. It was superseded by the Target 2 Depth (pictured far right) in 2001: the 'new' model featured a much larger display for easier viewing and intelligent signal processing for strong and reliable performance in all conditions. The Target 2 Depth, and the Target Log, Wind and Compass, still sell in high volume today.

The Target 2 model was voted the PBO Best Budget Buy in an electronics test in the June 2007 issue. Pat Manley reported: 'This is a very basic depth sounder, but for ease of use that's no bad thing'. You can set a shallow alarm and a deep alarm, with activation of either showing a flashing bell symbol and causing an externally-mounted buzzer to sound. The display size is excellent and its power consumption is miserly. There is no NMEA output, so the



NASA Target 2 cannot be networked with other equipment. Users are advised to find a good bit of hull by attaching the transducer with chewing gum



before committing to a permanent fixture. The Target 2 Depth sounder has a depth range of 0.8-100m and currently retails for £105.

■ www.nasamarine.com



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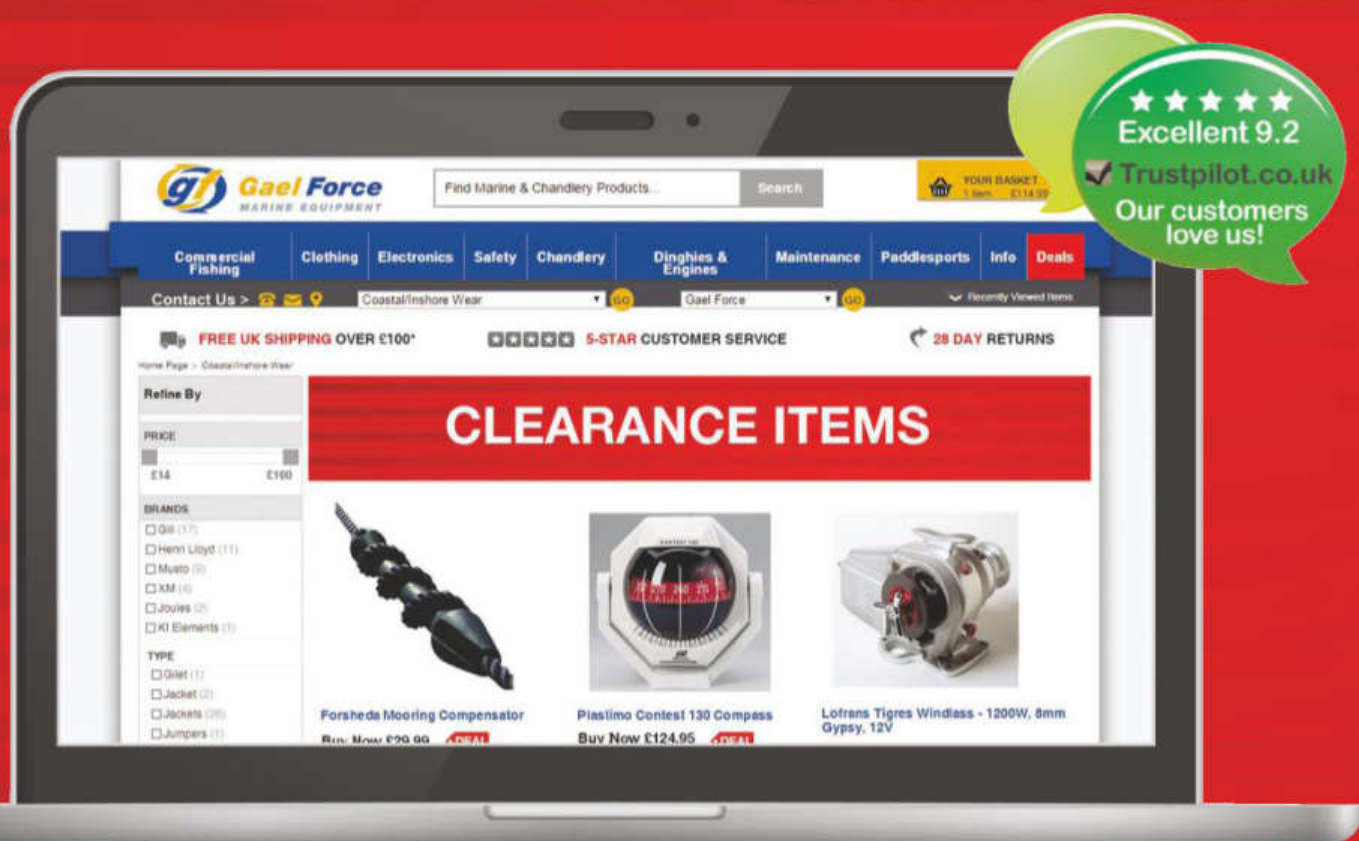


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Restoring a Pandora

Any misgivings Jake Ball might have had about opening Pandora's box – ie, restoring a conspicuously tatty Pandora 22 – were more than ameliorated when he managed to get her afloat once more

M eet *Epona*, my fin-keel Pandora 22, built around 1972 and designed by Van de Stadt. When I met her she was particularly unloved, having been abandoned by her previous owners at my sailing club (Hythe, Southampton) and left to fill her swampy bilges with rainwater, slowly leaking through her shoddy windows and overflowing aft locker.

I first nosily stepped on board in 2013 when summer was on its way. I was 17, in my first year of college and putting a daily effort into passing my driving test as quickly as possible. For almost all of my life I have sailed on cruisers, mostly belonging to my dad, but I have also always been a keen dinghy sailor. After having won the winter series at my club the previous year, and getting tired of associating sailing with 'wet' and 'cold', I thought it was about time I had a go on



Raring to go – all loaded up in the Hamble complete with 'spoiler' to support the mast during trips down the French canals

something more accommodating!

I climbed up the side of the cradle and clambered through the unlocked forehatch to assess the disgusting state in which *Epona* had been left. As I looked around, trying my best not to breathe in the muggy old air, I nevertheless knew I had to have her.

There was debris strewn across the damp bunks, her walls were covered in grime, and the floor – which was under the water – was covered in slime. Yes, her bilges were filled and overflowing, and there was a definite tide line just below the galley, at least 1ft above the floor.

Since she had been abandoned, *Epona* was now the property of the club, who had her up for sale at £500. However, my offer of a mere £400 was swiftly accepted,

and I was able to crack on with the work: after passing my driving test, I had the means to reach the club on my own whenever I could.

My first course of action was to remove everything: there wasn't a single item on board that wasn't sodden, mouldy, rusting or just disgustingly dirty. It was decided that the toilet was more trouble than it was worth, so it was completely removed. The old gas cooker was more rust than stove so it was also torn out, although I hung on to the gimbals for future use. This ruthless sort-out, with numerous trips to the dump, gave me an idea of what sort of kit she had and which bits were still useable.

Her collection of sails came as a pleasant surprise: original mainsail, genoa, working jib and storm jib. The main was admittedly very baggy and the jibs very dirty, but given their age the foresails were otherwise in good condition. I managed to salvage some of the less revolting foam bunk cushions (some had to be replaced), and after they'd been washed and dried my mum kindly made some new covers for them.

The second task was the cleaning – a laborious job, but very rewarding. This began, of course, with the pumping out of her bilges, but was followed by me, clad in swim shorts, scrubbing away at every inch with a bucket of washing-up liquid and bleach kitchen cleaner. I'm not sure

ABOUT THE AUTHOR



Jake Ball is a 19-year-old student who has been on and around boats for almost all of his life. He began dinghy sailing aged 5 and is now a qualified dinghy instructor. His life aboard *Epona* is spent reading, cooking, playing guitar and drinking wine!



Epona completely sanded down

quite how long it actually took, but it was certainly a lengthy process.

The third main chore was to scrape and sand the hull. The keel required extra attention to some ugly patches of rust, which had to be taken back with a scraper and wire brush and then primed before rolling on the antifouling. The rudder and a few flakey patches on the hull were also scraped back, primed and antifouled.

There were lots of smaller jobs going on at the same time, like checking the rigging and electrics. Numerous ropes went through the wash, and some just needed drying. I replaced the halyards and the mainsheet and fitted a mast support post in an attempt to diminish the sagging in her deck. I even made inserts to create a double bunk in the bows for added comfort!

Weekends on the water

We launched at the end of the summer and I was pleased to find she sailed well, her hull shape performing obligingly upwind although not helped by the stretched and baggy old main. (However, this was useful in light winds.) Unfortunately the redundant toilet outlet was leaking, but this was fixed fairly promptly with a good helping of Sikaflex



ABOVE Huge amounts of rust in the keel, particularly where it met the hull

TOP RIGHT The finished paint job, very shiny topcoat and a crisp boot top strip

while propped up on the club pontoon at low tide. I enjoyed a good handful of weekends on the water, getting used to sailing and manoeuvring her: it wasn't the best sailing I'd done, but it was a pleasure to have a boat to call my own on which I could enjoy exploring the Solent, often excitedly with friends!

She was back on her cradle for the winter, and preparation for the following season was very similar as my plans were to simply enjoy the extra freedom in the summer. However, I did sand back the entire hull then paint with antifouling, Toplac as a topcoat and even a boot top

strip. In addition to this I refitted and resealed the windows, which had continued to leak.

I continued dinghy sailing on the side and working towards my Dinghy Instructor (DI) course, although after spending a considerable amount of time in the water while trying to race my contender, my focus did switch predominantly to working on *Epona*. We even had a very unsuccessful race attempt at the club: it's the taking part that counts, though!

The real modifications began after I passed my DI course in September 2014. To prepare for this I enjoyed two weeks of dinghy sailing on holiday in Greece, but had grown envious of the cruisers dipping in and out of the bays in crystal-clear water, so I decided I wanted to take my boat to the Med. After a fair bit of research and some parental concern about sailing the Bay of Biscay, I decided my best route was through the French canals. There were two main aspects I needed to address: making single-handed sailing much easier, safer and more comfortable, and making *Epona* fit for the canals.

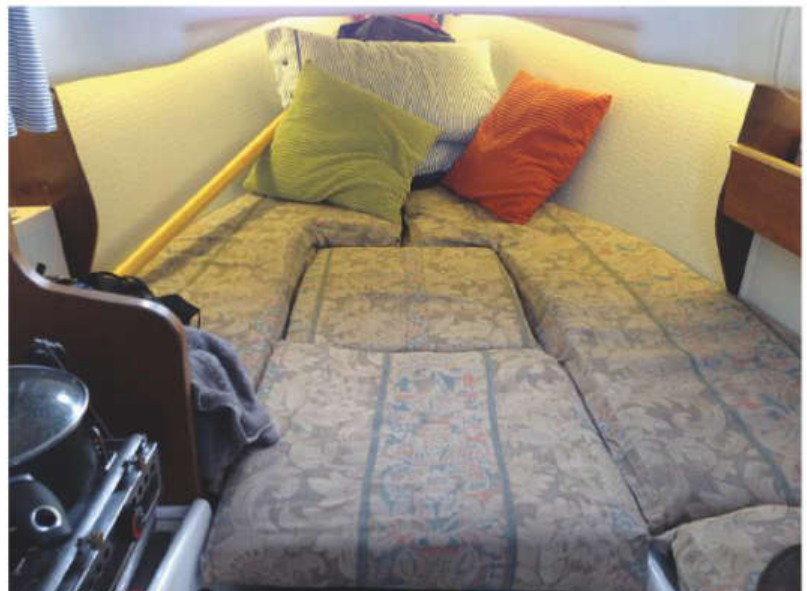
With a block on the front of each handrail and a cleat further back on



A much cleaner interior. This shows the structure of my 'double bunk'



The interior paint job: Epona was beginning to feel tidier and homely





ABOVE First use of the well-preserved genoa, surprisingly tidy despite its age



ABOVE RIGHT My first sail, goosewinging with the original main and dirty jib

the coachroof, I could hoist both sails without having to leave the cockpit. I also had a second forestay made, and with two off-centre U-bolts, a forestay lashed to each with a length of Dyneema, I allowed myself to have two foresails ready to go at one time. This was accompanied by a downhaul on each side, both running back to the cockpit through a few rings lashed to the stanchions. This meant that when sailing I now only had to run up to the bows to change over the jib halyard or jib sheets. Also added was a second-hand Wayfarer main in very good condition, and which fitted perfectly after having a bit of its belly chopped out by a sailmaker.

Med mods

When reaching the Mediterranean I planned to make full use of the anchorages, so I needed to ensure I had a trusted setup with plenty of rope and chain. I set off with a 5kg Delta as my main anchor, with 25m of chain and a good 30m of rope, and a hefty 7.5kg Danforth as my kedge, with 10m of chain and 20m of rope. In addition to this I had about 5m of spare chain on board, which comes in handy as a damping weight.

For the canals, my dad and I made a funny-looking 'spoiler' to support the mast. It had three U-shaped grooves in it, the idea being that I could change which side it was on. Supported above this was a rotating plank of ply, which angled my solar panel to its optimum position. Although it's an odd-looking structure, it is useful: the solar panel works a treat for keeping my phone alive between shore power points and the frame saves space inside, being the home of my boathook and scrubbing brush. I even now have a

washing line running from my spoiler to the backstay: very useful!

With another two lengths of trusty ply, we constructed two fender boards – crucial for going through locks in a boat with curved sides. They would also form a barrier between my precious fenders and the grimy lock walls, so I was free to bump and nudge my way into all 236 of them!

A lot of people thought I was crazy to be crossing all of France with just a 4hp outboard; but after a good servicing, a slight modification and a toolbox filled with a plentiful supply of spares and spark plugs, it was all I needed. (Writing this three months into my journey, I can happily say I still haven't had to use any of those spares, except for one precautionary spark plug change.)

The main task with the outboard was more of a practicality. In the worst-case scenario I would be motoring across the Channel, and after that I would of course be using a lot of fuel. Converting the outboard to a 20lt external tank meant I

could not only hold a considerably greater amount of fuel, it also saved me from filling up the feeble 3lt internal tank every five minutes. With an additional four 5lt petrol cans (with which, on my trolley, I could walk to the petrol station and back) I had a total of 40lt capacity which, in theory, would see me across the Channel if needed and keep me going on the canals even if the fuel stops became sparse.

In terms of servicing I simply greased what needed greasing, checked and changed the spark plug, learned how to change (and then changed) the impeller and learned how to change the gear oil. My understanding was basic, but I knew which parts were the likeliest to go wrong and subsequently how to fix them. If all else failed, I had a very long oar...

Lots of this equipment, when new, can be very costly, so as a poor student I found boat jumbles to be indispensable. The Wayfarer sail was of course key, as well as four large Hercules fenders – a steal at £12. In addition to this was my trusty collapsible trolley (which proved useful for both fuelling and shopping), the 20lt fuel can, a block and tackle for my mainsheet and a spare, two aluminium cleats for the stern and most of the blocks and cleats used for the modifications.

The final element was the electrics. I already had a battery with all my navigation and masthead lights wired in, but in previous seasons I hadn't really used them since I hadn't been sailing at night and had only anchored a handful of times. Since the Channel crossing would be through the night, I changed the masthead lights to LED so the battery wouldn't run out before we got there. The solar panel had to be wired in, along with

▼ Twin forestay fittings allowed me to have two foresails ready to go at one time



the mains battery charger, my brand new depth sounder and of course a 12V charger socket for my phone and iPad.

Crossing the Channel

So now, with around £3,500 saved up from my part-time job at Waitrose, I was all ready to go. My five months' leave from work had begun, and I got suitably drunk at my leaving party with my school and work friends. Unfortunately, the week we planned to make the crossing was plagued with near gale-force winds in the Channel, so after loading up the boat I took to living on it for the week in protest. I pottered around in the Solent, only really coming ashore for my dad's 50th in Hamble and for plenty of goodbyes at home! This proved useful as I was able to try out the new modifications and see if anything needed a last-minute tweak (which fortunately wasn't the case).

On Tuesday 7 April, around 5pm, my mum waved at me from Hythe Sailing Club's slipway as I left my mooring. I met my dad in the Hamble where we left the Warsash pontoon and went on our way around 8pm. We motor-sailed out of the Solent and reached the Nab tower just past 11pm. It was a very still and peaceful night: unfortunately this meant we were motoring, but it was better than being in the conditions of the previous week.

We took turns at the helm while the other slept for about two hours. As the

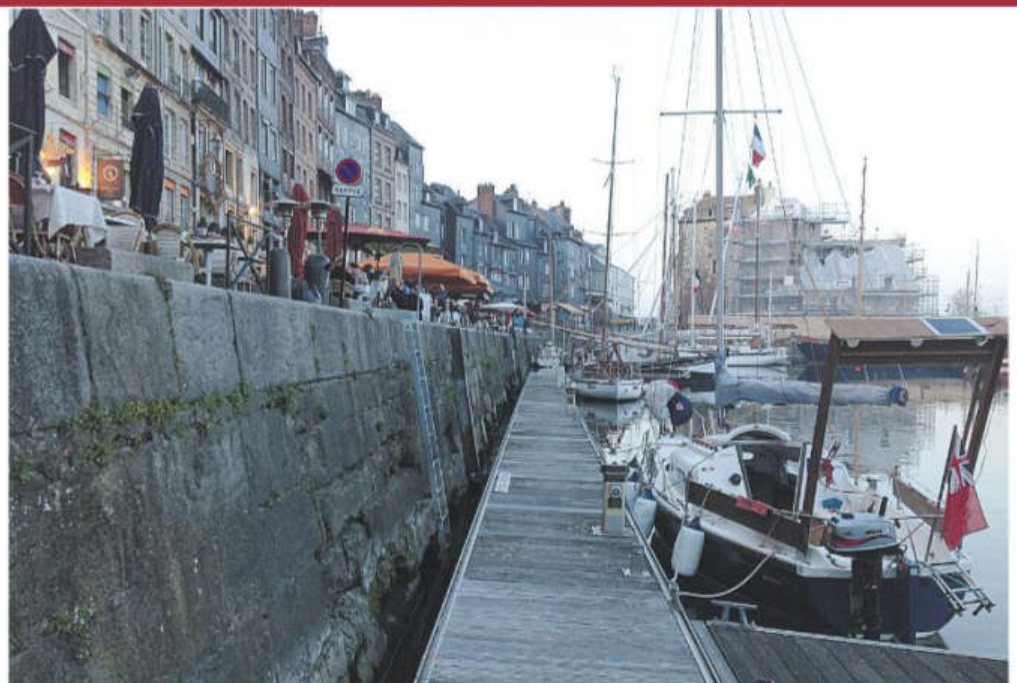
Epona moored in Honfleur after a successful Channel crossing

night went on, we each wanted to sleep longer and longer. After my few hours sleep, I woke just before 10am to the most perfect conditions: we were sailing with full main and genoa in a gloriously steady Force 3 from the south-east. It was clear and sunny, and we were making an impressive 6.5 knots over the ground. The wind and weather were good to us all day: the wind dropped a tad in the afternoon, when we resorted to motor-sailing again, but as we approached Le Havre in the evening it picked up

suddenly to around Force 5, and we were forced to reef and drop to the working jib.

After 110NM we arrived tiredly in the Honfleur lock at 11:55pm, and shortly afterwards we were moored to dry land once again. Sitting in Honfleur, in the cockpit of my very own boat, I handed a cold beer to my dad, without whom none of this would ever have been possible.

The following morning my dad hopped on a ferry back to England, leaving me to begin my journey through the canals: a whole 1,322km and 236 locks to go!



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Aurora safely moored in the sheltered anchorage at Storön in the Svenska Högarna. INSET Launching on the public slipway at Högmarsö

Trailer-sailer to the Baltic

When Charles Erb took his family of four for a month's cruise in the Baltic, using a trailer-sailer maximised the time spent exploring this idyllic and accessible sailing ground



ABOUT THE AUTHOR



Charles Erb came to sailing only a decade ago, when he discovered it was possible on a limited budget.

Living in the Midlands, he chose a trailer-sailer and bought *Aurora* three years ago, trailing her to many areas around the UK coast with his family.

Why the Baltic? Why in a trailer-sailer? The Baltic Sea must be one of the most beautiful areas in which to cruise a yacht of any size, but seems particularly well-suited to a small yacht. It has many islands close together, which means that there is always a choice of destination, whatever the wind direction, and shelter is available when you get

there if the wind is strong.

Almost every island has a place where a boat can be moored directly to the shore, allowing the crew to simply step off and explore. The water is warm for swimming, there's interesting wildlife and the scenery is outstanding.

The distance to the Baltic may seem rather daunting, but the beauty of a trailer-sailer is that by quickly covering the distance from home to the cruising ground, one

can maximise holiday time in the place one came to see. Even factoring in the cost of the ferry crossing and the fuel for the towing vehicle, there is a significant cost saving compared to a charter.

It's great to sail your own boat in a new location, because as well as costing less, being familiar with all the details of your boat means you can bring more luggage compared to a charter. The main downside is that a trailer-sailer is smaller than a charter boat, but we turned that to

our advantage by visiting places which are inaccessible to larger boats with deeper draught.

Preparing the boat

Our boat, *Aurora*, is a Cape Cutter 19 and her sail plan makes her adaptable to a range of conditions, as well as being easily sailed single-handed. Her internal space is maximised by clever design, so all four of us can sleep

aboard, while a custom-made galley with a meths stove meets our catering needs. It's not exactly luxurious, but with a bit of pioneering spirit, we have enjoyed many trips afloat. As a family of four, we have explored many UK locations, but we were looking for more of an adventure with this trip.

Aurora is fitted with basic instrumentation – depth, log, compass and simple GPS. She has VHF and nav lights at the masthead, although we used the former very little and the latter not at all. The electrics are powered by a large deep-cycle battery, which we kept topped up with a pair of 30W solar panels. The biggest drain on the battery was gadget charging, but the solar panels easily kept pace with this demand.

Mosquitoes can be a problem in the Baltic so we made weighted mosquito nets for the forward

hatch and companionway, allowing us to maintain ventilation while excluding insect life in the evening. In fact, mosquitoes are only a problem for a relatively short period at dawn and dusk, when long sleeves and long trousers are needed to keep the insects at bay if you're outside.

When not sailing, *Aurora* is powered by a 5hp four-stroke

We visited places which are inaccessible to larger boats with deeper draught

outboard. This is very economical and was not used for long distances: I carried a 20lt fuel tank, supplemented with two 5lt petrol cans, and this was enough for the whole trip.

Travel details

I considered several routes to bring *Aurora* to the Baltic. One option was to use a short sea crossing at the Channel, followed by a substantial road journey. The alternative to this was to use a longer ferry crossing, and this was my preferred choice because the journey time was reduced, as were the road miles, and the costs were comparable.

There are fewer ferries crossing the North Sea than in the past: there is no longer a passenger ferry from Harwich to Esbjerg in

Denmark, but DFDS run several freight routes. The DFDS freight ferries are a convenient way to reach the Baltic, running six times a week to Göteborg from Immingham (at the time we travelled, we used a similar crossing from Tilbury). This route provides easy access to many Baltic areas within a day's towing.

These crossings have limitations:

they can only be booked up to six

weeks in advance, and space can be reserved for no more than two people per vehicle.

Accommodation aboard is in simple but comfortable twin cabins: all meals during the 26-hour crossing are included, and eaten at set times with the crew. On our trip, my older daughter and I travelled by sea, while my wife and younger daughter took a low-cost flight to Stockholm followed by a foot-ferry to meet us in the archipelago.

Launch and recovery

The Baltic climate is such that the sailing season is short, and boats must be recovered at the end of the season. There are currently fewer marinas than in the UK, with many harbours being run more like a club. However, more marinas

seem to be opening up in recent seasons. There are also lots of boatyards and private marinas which will crane boats in and out of the water. However, for a trailer-sailer, the good news is that there are also many public slipways, which are often free to use.

I found researching this aspect of the trip in advance challenging at times, but through a combination of sailing forums, internet searches and emails I could be fairly certain of suitable launch and recovery locations. In this search, as well as other aspects of planning the trip, I also found the resources of the Cruising Association to be particularly useful.

Navigation

On the one hand, the Stockholm archipelago has no tides or currents to worry about, but on the other there are a fearsome number of rocks. This can be quite intimidating at first, but this intricate terrain is part of the attraction. The best charts for the Baltic are the small craft charts provided by the Swedish Maritime Administration. These are provided in A3-size folios and are very detailed: the archipelago is criss-crossed with buoyed channels in which you will not encounter any hazardous rocks. It is a simple matter to make passage along these by hopping from one buoy to the next.

However, for a small, shallow-draught boat, this misses out some excellent opportunities. It also reduces the number of destinations available and can lead to passages which are longer than necessary. Furthermore, there is far more pleasure in sailing off the beaten track, close to the islands, where one can admire the wildlife and scenery much more easily.

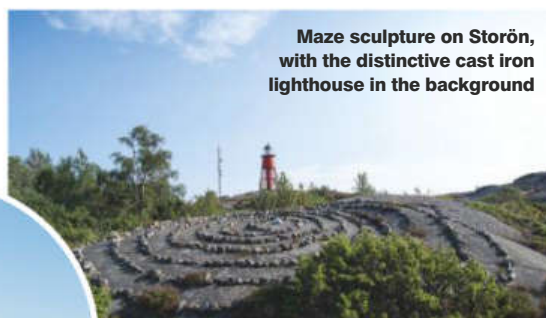
The electronic charting available is very detailed, and we used a tablet to zoom in and navigate between the rocks and find our way between the islands when we were out of the main channels. We saw very few other boats while we were doing this, which increased the sense of adventure for this trip. A GPS in one form or another is essential in this area, as from a distance the islands can look very similar and it would be easy to get lost among them if navigating visually from the charts. Visibility can also be poor at times.

Catering aboard

For this trip we deliberately chose to explore quieter areas, so shops were few and far between. We brought with us as much long-life food as we could,



Charles' daughter takes the helm, sailing round Svartlöga



Maze sculpture on Storön, with the distinctive cast iron lighthouse in the background



A well-earned swim while anchored at Kallskär. INSET Charles' wife at the helm



Under sail at Lönnskär.
INSET The children
enjoyed swimming, fishing
and exploring islands



The view from the
lighthouse on Storön

and stocked up whenever we were able to do so. Meals were cooked from fresh ingredients where possible, choosing vegetables which lasted well without refrigeration. We were lucky enough to catch some fish too, which added extra variety to our diet.

In season, some islands have small shops, and we found one or two with supermarkets easily accessible from the boat. We were surprised, however, to find many places closed after the second week in August, when their season quickly winds down. The Baltic islands have a short season: you will find shops in the archipelago open from May until early August.

We have no fridge aboard *Aurora* as we deemed this too power-hungry: we do have a really good coolbox, though, which we stocked periodically when we had access to shops. We tended to modify our diet so that we ate less food which required refrigeration.

Our small boat does not have a large water tank, and availability of fresh water was a consideration. We washed both ourselves and the dishes in seawater (much less

salty than home waters) and reserved the fresh water for drinking and cooking only. Many of the islands have public wells, which we used to keep our supplies topped up. Having removable water containers made collecting water easier in these situations.

Most of our meals were cooked using a thermal cooker (a type of modern hay box). This comprises two nesting saucepans and a well-insulated case. Food is partially cooked, and then the pan is safely clipped into the case and left to finish cooking over the next few hours. This reduced cooking fuel consumption and also meant that main meal preparation was at lunchtime rather

than in the evening, when there can be rather less enthusiasm for cooking!

I am a fan of fresh bread and I wanted to be able to bake aboard. This too was cooked in the thermal cooker: I took pre-weighed bags of dry ingredients with me, and the bread was quickly prepared without kneading. The sealed bread tin was boiled and then left overnight. It felt like a real luxury to wake up to warm fresh bread in the morning.



Islands visited



The Stockholm archipelago is part of the largest archipelago in the world and we restricted ourselves to exploring a small section of the central area. The islands are formed in small clusters and each island group (skärgård) has its own character: the following is a flavour of what we found.

Ångskär

Ångskär is higher than many other islands in the Stockholm archipelago, and its undulating shape has allowed more soil to accumulate and lush vegetation to grow, including deciduous woods. It's well worth climbing to the highest point to look out over this lovely scenery.

Furusund

A marina with adjacent slipway. Fuel and water available and a shop within walking distance.

Högmarsö

The island of Högmarsö is dotted with many holiday homes (sommartugor). There is a guest harbour with (during the summer season) a waterside bar, floating restaurant and a supermarket. This place is very sheltered and has a great party atmosphere, especially at weekends.



Moored bows-to at the marina
in Furusund



The secluded anchorage at Kallskärs

Kallskärs

The natural harbour at Kallskärs is one of the most beautiful we saw. It has the air of a secret place: the approach towards this smallish island is through a channel between rocky outliers. The anchorage itself is reached by making a sharp turn into a steep-sided channel less than 3m deep. It is an incredibly well-sheltered place and is popular with families.

Wild mooring and natural anchorages

Conditions in the Baltic are very different to the UK and, consequently, mooring is also very different. These islands were carved by glaciers, which melted to leave large areas of smooth rock and few anchorages with good holding. The Swedes rarely anchor, it seems, so if you wanted to drop the pin rather than moor, those anchorages there are always seem to be available.

Most islands in the archipelago are fringed with steep-sided flat rocks which, coupled with lack of tides, means that it is usually possible to moor almost touching the rock. Most islands have natural harbours where it is possible to bring a yacht within inches of the rock, and the distribution of these is such that there is always good shelter available, whatever the wind direction.

The method of mooring is to drop a stern anchor, motor toward the rock, secure the bow with lines ashore and then pull the lines tight by taking in the anchor warp. Many natural harbours have rings or spikes provided, which makes mooring very easy. In locations without permanent fittings, I always found rocks or trees to which I could secure. The use of mallets to drive in mooring spikes is discouraged, as this breaks up the rock. Baltic yachts are designed to



A tell-tale line of seabirds marking low-lying rocks. INSET A sea eagle



The rain cover was deployed at Rödölga Skärgård

be boarded via the bow, which can even overhang the rock. *Aurora* has a bowsprit, which sometimes served the same purpose.

I found it an advantage to have a good selection of long warps, and often had to double up warps in

order to reach a suitable point to tie off. Larger yachts usually carry a stern anchor on a tape reel but *Aurora* does not have room for this, so I moved the bow anchor to the stern each time we used a natural harbour.

Lönnskär

The northernmost island we visited, this is quite high and very steep-sided. It is covered with thick pine forest, where delicious blueberries can be found. There is a very sheltered natural harbour, and it is pleasant to walk up to the top of the steep rocks and look down on the moored boats.

Norrpada

This small island group is made from high smooth rounded rocks. Taller than most islands, there are more trees too. It's well worth walking to the summit for the wonderful views.

Rödölga and Rödölga Skärgård

These two neighbouring island groups are made of a characteristic pink rock, from which their name is derived. The main island of Rödölga has an excellent shop (including petrol, gas and a water tap) and

a busy sheltered harbour. The secluded natural harbour at Anskäret in the Rödölga skärgård is also worth a visit.

Svartlöga

Svartlöga's name comes from its dark appearance from the sea. It's low-lying, and much of it is covered in forest. There is a quay for the passenger ferry at the eastern end, as well as a smaller jetty suitable for craft of shallow draught. The pretty main



Using rocks to tie off at Södra Lönnskär

village with its red and white houses and beautiful harbour (with ice cream hut!) is on the south side. This island is not often visited by cruising yachts, due to the large number of rocks to negotiate. The island is busy in the summer with people coming and going by ferry, but there are few year-round residents.

Svenska Högarna

This is the last group of islands in the archipelago before the open sea begins, and much more exposed than most of the other islands we visited. The natural anchorage is particularly sheltered, though. There is little vegetation on the island, but it is well worth visiting for its landmark 19th century iron lighthouse. Climbing the 18m to the top will be rewarded with wonderful views across the archipelago. Despite the limited vegetation, there is also much wildlife to be seen here.

Useful resources

■ DFDS Seaways provide the last remaining North Sea crossings (http://freight.dfdsseaways.com/DFDS_ferries/North_Sea_ferries). Since our crossing, the Tilbury-Göteborg route seems to have been discontinued, but the Immingham-Göteborg route remains.

■ Swedish leisure charts (www.sjofartsverket.se/en). The Swedish Maritime Agency (Sjöfartsverket) provides folios of charts (Båtsporkort) for small craft, which are the best-value printed charts for this part of the Baltic.

■ *Arholma – Landsort and Gotland* by Lars Hässler and Lars Granath, published by Nautiska Forlaget, 2007. This excellent pilot book shows natural harbours, as well as guest harbours in the archipelago. It has supremely detailed chartlets of the natural harbours, indicating hazards and exact spots to tie up. The English version is out of print, but is sometimes offered second-hand: however, the Swedish language one would still be very useful (perhaps used with a dictionary), as the charts work in any language!

■ The Cruising Association (www.theca.org.uk). It's worth considering joining the CA, as they have a lot of useful information available to members. The cruising guides are very useful, and I also attended their annual Baltic seminar before travelling, which provided me with a lot of background information. Their Baltic forum was a useful place to ask questions and seek advice.

■ Navionics tablet app. The detail in these charts is excellent, and it was very useful to be able to zoom right in when navigating between islands with each group. I found that my tablet battery coped well with being in use all day, although I tended to switch the screen off if I did not need it. Two important hints would be to make sure you have downloaded all the chart area that you need when you have access to Wi-Fi, and also to make sure that your tablet continues the GPS track when the tablet is in standby (screen off).

An American Fast Fisher at speed. Even when the hull is properly trimmed, you need to be on the fly-bridge to see where you are going



Pat Manley

Pat Manley demonstrates how the trim tabs on semi-planing cruisers can be fine-tuned as a way to increase your cruising speed

Semi-displacement (or semi-planing) cruisers are a natural haven for sailors migrating from sail to power, and for some skippers this is the first time that they will have come across trim tabs. A 'semi-planing hull' ensures good low-speed characteristics and good all-weather performance, but doesn't offer very high cruising speeds. When accelerating to greater speeds, these hulls adopt a very tall bows-high attitude and won't achieve much above 10-12 knots unless the trim tabs are used. At speeds up to six knots or so, you can leave the tabs fully up. At full power and trimmed correctly, speeds of around 24 knots are possible.

How the trim tab switches work

Each tab has a separate rocker switch. Push the front of the switch down and the tab deflects downwards. Likewise, press the back of the switch and the

tab deflects upwards. Deflecting the tabs downwards causes the bow to adopt a bows-down attitude, while raising the tabs causes the bow to rise.

So:

To lower the bow, push the front of the rocker switches.

To raise the bow, push the rear of the rocker switches.

Why are there two sets of switches?

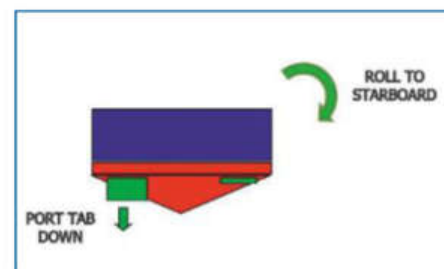
The hull can suffer from heel: this may be due to uneven loading or a crosswind, and it reduces hull efficiency at higher speeds. Using different settings of the starboard and port trim tabs allows the heel to be removed.

How do we remove heel?

Once you have set up the tabs for best boat speed, you can adjust the tabs separately to remove the heel. Pressing the front of the port rocker switch will cause the boat to heel to starboard.

Likewise, pressing the front of the starboard rocker switch will cause the boat to heel to port. In fact, unless the tabs are fully extended, reducing the tab angle on one side while decreasing it on the other will be more efficient. Some boatbuilders cross-wire the port and starboard switches so that the port switch operates the starboard tab and vice versa. It is believed by some that this gives a more instinctive operation for reducing heel.

To find the best setting for the tabs, you need to monitor the boat speed (not the GPS ground speed) as you adjust the tabs.



▼ TRIMMED FOR BEST BOAT SPEED



Kath Adcock

David Noyce

Trim tabs giving max speed at best trim, 14 knots cruising in this case. Aim for the horizon to be here for best speed

▼ TRIMMED BOW TOO HIGH



Kath Adcock

David Noyce

Tabs fully up, bows too high, but there isn't a great deal of difference in the horizon position

▼ TRIMMED BOW TOO LOW



Kath Adcock

David Noyce

Tabs fully down, bows too low, and the horizon too high on the pulpit





Position of the pulpit at six knots, tabs fully up

Pat Manley

Setting the trim tabs

If I wish to cruise the boat at higher speed I will slowly open the throttle(s) and at about 8 or 9 knots will run both rocker switches bows-down for 3 or 4 seconds. As the boat accelerates to my cruising speed I press the front of both rocker switches for a second at a time about every 5 seconds. Once the engine is running at my cruising rpm I observe the boat speed for 10 seconds or so. I then operate the tabs for one second (either up or down), wait 10 seconds and see if the speed has increased or decreased. If the speed has increased I run the tabs bows-down for another second and monitor the speed. I keep adjusting the tabs to achieve the maximum boat speed at that rpm.

Now, observe where the horizon cuts across the pulpit and use this as your reference for the future. Just accelerate the boat using the tabs to put the horizon in the correct place on the pulpit. Fine-tune the tabs by observing the boat speed. If there is any heel, use the tabs asymmetrically, a little at a time, to remove the heel. You may have to fine-tune the tabs again (using both switches together) to get best boat speed.

If you have a head or following sea, you may need to adjust the tabs from their optimum position to avoid burying the bow. If you are forced to cross a bar with breakers, then you will need to slow down and trim more bows-up, or go somewhere else! Remember that the slower you go,

the less effective the rudder.

In normal conditions, as following waves overtake the boat its speed will increase and the bow will drop as the stern rises – don't touch the tab switches, it will all come back to normal. When motoring into a head sea, the bow will rise and the speed will drop, again: leave the tab switches alone and normal speed will resume.

When you moor up

Retract the tabs so that marine growth on the rams does not destroy the seals next time they are retracted. This should become an automatic habit: put it in your 'shut-down check list'.

Planing hulls

Although the trim of a faster planing boat will be different, be it shaft or stern drive, you still need to get the boat on the plane by trimming the bow down as you accelerate. You then need to adjust the trim for best speed as before. In the case of stern drives, you will be trimming the drives themselves, as well as the tabs if they are fitted, but the procedure is the same.

Automatic trim tabs

If you don't wish to be involved in the operation of the trim tabs manually, you can leave it all to an automatic system. This sets the tabs once it has been calibrated, although you can use the tabs



An automatic trim tab control from Mente Marine

manually if you wish. When off the plane, it remains in a standby condition.

Osmotech (www.osmotech.co.uk/acs-by-mente-marine) are the importers of the ACS (Attitude Control System) produced by Mente Marine (www.mente-marine.com/acs-products/acs-rp). You'll need to contact Osmotech for the price, but it would seem to be in the region of £500 plus fitting.

Automatic trim tabs won't find the best setting for you, though: you still have to find and calibrate the best trim for your particular cruising speed on the day. At that point, select 'auto' and it will then maintain and remember that trim attitude. If you change the boat's load or want a different cruising speed, you'll have to find the best trim again, recalibrate and then reselect auto, so you'll still need to be able to set the boat up properly in the first place.





Polytunnel vision

John Owen constructs a versatile and economical boat tent from a polytunnel

After acquiring a Moody 33 MK1 in need of a total restoration, my friend and I needed somewhere to carry out the work. The boat was moved to a boatyard that could provide the space we needed, so we turned our attention to constructing a cover to keep the weather out. Initially we considered building a timber frame, but then we had the idea of using a polytunnel. We searched online and found that the latter option would be substantially cheaper, and duly purchased a 12m x 5m frame for £100 from an internet auction site.

We collected the frame and set about adjusting it to our needs, starting with extending the legs of the frame. We did this using 2m-long scaffolding poles: to connect the polytunnel hoops to the scaffolding we used a short piece of tube that would fit inside both the polytunnel tubes and the scaffolding tubes. It was necessary to bend the connecting tubing

ABOUT THE AUTHOR



John Owen lives in the West Midlands and started sailing and racing dinghies 35 years ago aged 14. He is now restoring a 1976 Moody 33 with a friend.

by 10° as the polytunnel hoops were not a complete semi-circle. The polytunnel came with ground tubes, which we didn't need, although they did have stop collars which we repurposed for use on the connecting tubes.

We were now ready to erect the frame, but where to start? Normally when erecting a polytunnel it's easiest to work from one end to the other, but this one would be 2m above the ground with the four middle hoops over the boat and the two ends extending past it. For this reason we started at the centre, hoops three and four, and worked outwards. We fixed the two scaffolding legs into position on each side and connected them together horizontally with more scaffolding tube. We also used more scaffolding tubes as temporary supports while we prepared the polytunnel hoops.

The hoops were assembled on the ground before being passed up onto the boat. Then they were positioned over the legs: with one of us on the boat, holding the hoop in place, the other could fit the

connecting tubes in each end and fix it to the top of the legs. The first hoop we erected had to be held up temporarily with a couple of guy ropes while we put the next one up and connected them together with the ridge pole. We also tied the hoops to the toerail of the boat to further stabilise the structure. With the two middle frames in place we then worked our way to the ends, putting up the remaining hoops. With the end hoops not being over the boat we used a ratchet strap to hold them to the correct width.

It's curtains for you

Finally, with the frame assembled and in place it needed to be fully covered. We tackled the sides first: a friend who worked for a used commercial vehicle dealer gave us the idea of using the curtains from the sides of lorries. When ownership of a lorry changes, the curtains bearing the previous owner's logo are replaced, and this dealer was willing for us to take some away rather than disposing of them. ➔



Attaching the curtain track to the hoops: We cut holes the size of the tubes in blocks of wood then cut the block in two, through the hole, to leave a semi-circle in each piece. We then attached a plate to the longer piece of wood and bolted them back together around the pole



For the corner brackets, two holes were drilled in the corner of the remaining box section to allow it to be clamped to the tube

The curtains needed to be on a track so we could open and close the sides. The curtains were 450mm longer than the legs and needed to hang vertically, so we had to find a way to attach the track to the hoops. We cut holes the size of the tubes in blocks of wood then cut the block in two, through the hole, to leave a semi-circle in each piece. We then attached a plate to the longer piece of wood and bolted them back together to clamp around the pole, as shown above. The plate was used to attach both the top cover and the track. We bought the tracking from a local supplier of body parts for commercial vehicles.

The corners presented more of a challenge as they needed to allow fixings on the side and the ends. These corner brackets were made from 75mm box section steel, 150mm long. From halfway along two adjacent sides were cut away, and what was removed was welded to the remaining two sides to create fixing tabs. Two holes were then drilled in the corner of the remaining box section to allow it to be clamped to the tube as shown. A block of wood and a plate were bolted to the side to match up with the other side brackets, and an extension plate bolted onto the other side for the end of the tunnel.

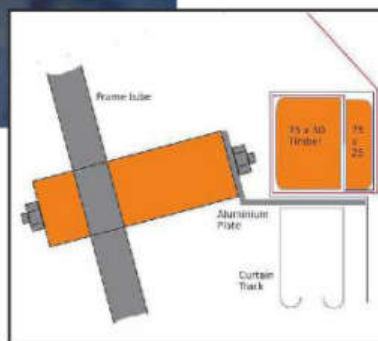
The top cover

When the frame was erected we shortened the polytunnel a little and it was now only 11.4m long. The distance over the hoop from fixing point to fixing point was 6.6m. We had decided that the best way to fix the top cover would be to roll it around a beam the same length as the frame, and this would use up 600mm of cover on each side. We also wanted to leave a small pelmet of 100mm to cover the curtain track, so we therefore needed a cover for the roof of 12m x 8m. After conducting an internet search we found a 12m x 8m reinforced clear PE tarpaulin of 200gm per square metre at a reasonable price: the supplier also sold an 8m x 5m sheet which we needed for the ends of the tunnel.

To fix the sides we used a 75mm x 50mm timber beam made by joining three 4m lengths together with glued and screwed scarf joints to create a beam 11.4m long. These beams were temporarily fixed to the side brackets with G-clamps. We draped the cover over the top of the frame and held it in place with speed clamps. The cover was then marked at 425mm from the edge, as we had calculated that was where the bottom edge of the beam needed to be when the cover was fixed. To fix the cover

we first held it in place with staples and then screwed clamping strips of 75mm x 25mm x 1.5m timber over the top. The beam was rotated 360° so that the cover was completely wrapped around it, then it was screwed to the bracket to fix it in place. The diagram below shows the cover as the red and blue lines: the red is the cover above the beam over the top, and the blue is the cover below the beam that leaves the 100mm pelmet.

The process was then repeated on the other side. To tension the cover over the top of the polytunnel the clamping brackets were slackened off and pulled down on one side and then the other.



▲ The red line represents the cover above the beam over the top, and the blue line represents the cover below the beam that leaves the 100mm pelmet

Filling in the ends

We needed the ends of the tunnel to be removable in the summer and in place for the winter. We used the 8m x 5m sheet and cut 3m off each end: this gave us two 5m x 3m sheets each

with a cut edge and three edges with eyelets for fixing. We used the same method as with the top cover, ie fixing of the sheet was the same as the sides, with a clamping strip and a turn around the beam. Once this was done, three eye bolts were fixed through the beam to provide fixings for lines that would hold the ends of the top cover down. As it was late spring, and we would not need the ends filled in, the cover was rolled up and lashed to the top of the beam.

Fitting the curtain sides

We were given the details of a local commercial vehicle body parts factor, who sold replacement track for curtain sides at £5 per metre + VAT. We needed 11m for each side and 5m for each end, a total of 32m. The track came in 3m and 4m lengths, so we bought four of the 3m lengths and five 4m lengths. We used one 3m and two 4m lengths on each side, and one 3m and half of a 4m length

▼ When the frame was erected we could start adding the top cover and filling in the ends (below)





▲ To hold the curtains down, eyes were cemented into the ground



▲ At the ends, the eyes had rings attached, and these were squashed slightly so they would fit into the buckles



on each end. The track was fitted by simply screwing it to the underside of the beams.

The curtains we decided to use were a little tall for our needs, so the rollers were removed from the top and the curtains shortened by 200mm, then the rollers reattached. The curtains were fed onto the tracks with the buckles on the inside, the first one going across the front and partway down the side. The second one was cut to fit the remaining side. The third one went across the back and partway down the other side, with a final one finishing the side to the front corner. Once all of the curtains were in place a hole was drilled in the side of each track, at the ends, and a small bolt put in place to stop the curtains from coming off.

We needed to hold the bottom of the curtains down, and fortunately had just replaced the guardwires on the boat so we were able to recycle the old wires for this purpose. We attached the wires to the base of the scaffolding poles all around the frame, using an additional two eyes across the ends cemented into the ground where there weren't any poles. Once all the wires were in place they were tensioned with bottlescrews in two of the corners. The curtains still had the buckles attached, and they hooked underneath the wires and were fastened. At the ends, the eyes had rings attached, and we squashed these slightly so that

they would fit into the buckles.

To finish securing the curtains where they overlapped, we used short bungee cords. We attached eyelets to the bottom of the curtains and hooked the bungees to them. At the top, we hooked the cords to the roller frame on the adjacent strap.

The polytunnel in use

All in all, the polytunnel boat tent has worked well, and the curtains are great. We only need to open up a corner for access in the winter, but in the summer we can open both ends and the sides to help keep it cool. The covers for the ends went up easily when they were needed and, with a bit of sun, it gets warm enough inside even in the middle of winter to allow us to carry on working.

There have been a couple of issues with the top cover that, with a little more knowledge of polytunnels, could have been avoided. Firstly, polytunnel frames get hot in the sun, and this can cause a deterioration of the cover. A foam tape, called anti-hotspot tape, is applied to the tubes to insulate them from the cover. Our frame had most of its anti-hotspot tape still in place, but unbeknownst to us the covering layer had come off, and it is this thin film which prevents a reaction taking place between the foam and the covering sheet. We discovered this on a wet autumn day when we noticed some drops of water on a couple of the frames:

▲ We attached eyelets to the bottom of the curtains and hooked bungees to them. At the top, we hooked the cords to the roller frame on the adjacent strap

closer inspection revealed some small holes in the sheet where it was in contact with the tube. An internet search revealed both the cause of the problem and the solution – an anti-hotspot repair tape that could be placed over the existing anti-hotspot tape. The same supplier also sold polytunnel repair tape in various widths.

To make the repair, we loosened the brackets on one side, allowing us to push up the side beam and thereby slacken the entire cover. This enabled us to first fit the anti-hotspot repair tape and then a strip of 50mm polytunnel repair tape to the inside of the cover. We also cut some 150mm strips from the remaining bit of cover we had left and fitted these between the hoops and cover. On the outside, we applied a strip of 75mm repair tape over the area it had been leaking from. The repairs have been fine throughout the winter, and the supply of repair tape has been useful for a few minor repairs.

The second issue we have had is condensation on the inside of the top cover. We didn't have any problems until we put the end covers up, in the middle of October. A few weeks later we opened up as usual and got dripped on: the inside of the top was covered in water droplets. We have alleviated the problem by fixing a second lightweight polythene sheet on the inside with a small gap between this and the outer sheet: this catches the drips and directs them down the edge of the tent away from the boat and us.

The only thing I might consider changing is the top sheet. The one we've used is fine, and with a little TLC and some repair tape should see us through to the end of the restoration of the boat: but, as stated earlier, it is 200g/sq m. We have since found out that the sheeting normally used on commercial polytunnels is a lot heavier at 700 to 800g/sq m and has a life expectancy of five years.

What it cost

Polytunnel frame	£100
Scaffolding tube	£100
Tarpaulin sheets	£170
Timber for the side/end beams	£50
Track for the curtain sides	£200
Other bits and pieces	£50
TOTAL	£670

We already had some items, for example the scaffolding joints, but even with everything added in the whole structure has cost us less than £700. To my mind it has been well worth it for the comfort it has provided when it has been pouring with rain outside and throughout the cold weather. We were able to work throughout the winter, so our estimate of two years to complete the restoration remains achievable.



The baby dragon that really flies



Equally happy cruising with the kids or flying two hulls at 20 knots, the new Dragonfly 25 is a versatile trailable tri. David Harding went for a spin

Let's say you want to hop around the coast from Emsworth to Southampton on a Wednesday morning before the boat show – as you do. You step aboard in Emsworth Yacht Harbour, fire up the 6hp outboard and motor out over the sill and down through the moorings. When you have space you round up, hoist sail, kill the engine and set off on a two-sail reach towards Hayling Island at a leisurely 10-12 knots. It all feels a bit too gentle and you want to make progress, so you unroll the Code 0 and your speed picks up to around 15 knots as the apparent wind builds and moves forward.

As you get further down the harbour, the easterly breeze increases to around 16 knots and your boat-speed keeps climbing.

You're not focusing on the numbers on the GPS because you're watching the approaching gusts, the bow of the leeward hull (this boat has three), the luff of the Code 0 and how much space you have to bear away, but you see later that you recorded a peak of 17.8 knots and a 10-second maximum of 17.5 knots.

After a brief pause to take some photos, you continue under Code 0 out of Chichester harbour and into the chop of Bracklesham Bay. The boat begins to bounce a bit more but stays remarkably dry. Since it's downwind to Southampton and you need to start sailing some deeper angles, you switch the Code 0 for the spinnaker, put the bow down – maintaining 14 knots but with a better VMG towards your destination – and continue to enjoy the ride.

In an ideal world, the story would end with the boat tied up in Southampton 90 minutes later after a downwind sleigh-ride all the way. In the real world, it did end with the boat tied up in Southampton after a perfectly pleasant passage, though a combination of shifting breezes, the odd technical issue and the desire of the boat-testing member of the two-man crew to do some upwind sailing as well meant that it took a little longer than 90 minutes.

The reason for the trip was twofold – just like the boat, in fact. I wanted to test the new Dragonfly 25 Sport, which the UK distributor, Al Wood of Multihull Solutions, was taking to the Southampton Boat Show for her first public showing. So it made perfect sense for me to sail with Al on the delivery trip, using one stone to kill two birds on three hulls.



Speed log: our maximum (bottom) and over a 10-second period (top)

Fast and foldable

Folding trimarans tend to fold in one of two ways. The Dragonflies' hulls rotate about a vertical axis, swinging in and aft. In the case of the 25, this reduces the beam from 5.8m (19ft) to just 2.3m (7ft 7in), making her narrower than a



The 25 is the first Dragonfly to sport reverse rake on the bows of the floats. It's functional as well as fashionable



Narrow beam when folded, combined with a weight of just over a ton, simplifies trailing and marina berthing



Open-backed rudder stocks allow the blades to be moved vertically – and, importantly, to kick up on impact

typical modern 7.6m (25ft) monohull. Inevitably, however, she grows longer in the process, from 25ft to just under 30ft (9m).

This is one of the fundamental differences between the Dragonflies and the other sporty trimarans you're likely to see cruising effortlessly past you, the Farriers and Corsairs. The latter pair (with common ancestry in Ian Farrier) have hulls that rotate through 90° about a horizontal axis. This means that the boats stay the same length when folded, but the topsides of the floats become immersed.

The Dragonflies' mechanism is delightfully simple to operate. To fold each hull in, you release the line marked 'fold out' and pull the one marked 'fold in'. To unfold again, you reverse the process, winching the 'fold out' line the last inch or two to make sure it's tight.

Then the structure is remarkably rigid, as it needs to be on a boat capable of sailing at 20 knots on one hull.

The simplicity of the operation belies the complexity of the calculations necessary to make it all work. Extensive use was made of 3D modelling, followed by CNC tooling to ensure the project moved from concept to completion as swiftly as possible. It was indeed a remarkably swift operation. The Dragonfly 25 was announced to the world at the Düsseldorf Boat Show in 2014. At this stage she existed as little more than a drawing to gauge the public's reaction. A year later she was there in the flesh. Now, more than a dozen have been built and, if you want one, the earliest delivery slot is early next year.

Although 25ft is small by today's standards, creating a lightweight, high-performance folding trimaran is far more involved than designing and building a conventional cruising monohull of similar length. It's nothing new to Quorning Boats in Denmark – headed by Jens

This is the first Dragonfly to sport reverse rake on the bows of the floats

Quorning, who is also the designer – because they have built about 650 folding trimarans over three decades. Nonetheless, the folding mechanisms and, of course, the design of the boats as a whole, have continually evolved. For example, the 25 is the first Dragonfly to sport reverse rake on the bows of the floats. Reverse rake has become the norm on performance multihulls in recent

years, the logic being that you want to get the buoyancy as far forward and as low down as possible to resist the diagonal forces downwind. Conventional (forward) rake, especially when combined with flared topsides, allows the bow to start immersing before the increased buoyancy further forward and higher up comes into effect. Proponents of reverse rake maintain that, as it immerses, a conventionally-raked bow will meet more resistance and tend to slow down, leading to greater tripping moment.

The idea is that reverse rake and the almost pear-shaped sections of the floats on the Dragonfly place the buoyancy where it's working all the time. In essence, less immersion means less resistance, less tripping moment, greater safety and more speed, while the fine, rounded tops of the hulls mean that if they do spear into the back of a wave they should pop up quickly. Not everyone agrees with reverse rake, but that's the current thinking in performance circles.

As you would expect, the Dragonfly's floats are asymmetric to provide lift to windward. They also extend forward of the main hull in sailing mode, again to place the buoyancy well forward and maximise diagonal stability. In addition to this change with the latest model, the total buoyancy of the floats is greater in relation to the boat's displacement than on any earlier design, allowing her to be pushed harder and – should the fancy take you – sailed on one hull. That's what many trimarans do these days.

Immersion exercises

Sailing with two hulls in the air is not obligatory with the Dragonfly 25. In fact, it's only an option with the Sport version – the one I tested. This has a rotating carbon wing mast just under 12m (40ft) high and – a first for Dragonfly – a rudder on each float. If you're

going to fly the centre hull, that matters.

All this flying around might sound a little hairy for some, but what if you still like the idea of sailing at double-figure speeds without effort in a boat that weighs just over a ton and will float on a damp sponge? In that case, go for the Touring version, which comes with an aluminium mast more than 1.2m (4ft) shorter (still rotating) and a rudder on the main hull. By conventional standards it will be blisteringly fast; just not quite as fast as a

Sport version sailed by a crew who know what they're doing.

On our delivery trip, one of the crew knew exactly what he was doing while the other was on a steep learning curve. Nonetheless, our little coast-hop proved yet again that the ratio of boat-speed to manpower on a boat like this is hard to beat in cruising terms. What other sort of trailable, beachable weekender-cum-coastal-cruiser could easily, comfortably and safely sail as fast as or faster than the wind on a day like this with just two people aboard? How many cruiser/racers of any description could do that?

Our speed-of-the-wind sailing came to an end after a spinnaker-related glitch that was easy to fix, but not there and then. Despite the frustration of having to complete the trip under plain sail, I was mindful of the fact that we were finding it thoroughly boring to be ambling along at a mere 10 knots – a speed that would produce white knuckles and racing pulses on many 25-footers. On the Dragonfly it was like being stuck in second gear.

Being without a spinnaker, we decided not to race *Phaedo* (the multiple-record-breaking MOD 70)



LEFT Most of the time the helm station is the windward trampoline...

...but there's a whipstaff in the cockpit too (below)



as she headed back into the Solent from the direction of Nab Tower at 30 knots, so we let her pass. I did want to try some upwind sailing, however, so at the entrance to Southampton Water we hardened up on the breeze. We were carrying the full mainsail and, in around 20 knots, it was at the upper end of what was comfortable, especially given the steep chop that had built up by then. On starboard tack the waves were almost on the beam, meaning that on port they were bang on the nose. Thankfully the little Dragonfly had the power to allow us to drive deep and sail through them, so we still clocked speeds into the 8s and 9s for much of the time.

Now, sailing a sporty 25ft trimaran into a seaway at

9 knots in 20 knots of wind sounds like a good way to get wet – but, strangely, it wasn't. I didn't even don the top half of my waterproofs for the entire trip. The reason is the spray-deflecting shape of the main hull. A flare about 45cm (18in) above the waterline develops into a pronounced return that stops waves from climbing up the topsides. Any that do make it further are met by a second return where the deck and hull mouldings join to form a deep lip between the bow and the forward beam.

Despite some inevitable splashing between the hulls, it's a remarkably dry ride. Another factor is that the helmsman is sitting on a windward float that's well clear of the water. The downside of such a large deflection area close to the waterline is a bit of thudding. Occasionally it felt like a sort of double judder, making me wonder at first whether there was flexing between the beams and the hulls, but the

whole structure, from the top of the rig to the tips of the floats, appeared as rigid as can be. Without the wave-deflectors, life in a seaway might become tiringly wet. This way, you get a bit of thudding and stay dry.

Dynamic sailing

Downwind at 18-20 knots and upwind at 10 knots in flat water: that's what the Dragonfly is capable of. You have to work to extract the maximum from the Sport version, however. That's in the nature of the beast. With a wing mast and a mainsail 4.27sq m (46sq ft) larger than on the Touring alternative she will power up more quickly and need reefing sooner. You also have to steer more actively downwind, when the windward rudder is dipping in and out of the water and changing the amount of helm you need. This was noticeable on our sail, though had we been under spinnaker the windward rudder would probably have spent most of its time clear of the water.

Because there's a rudder on each float, the two have to be connected: the windward tiller is controlling the immersed rudder nearly 5.8m (19ft) away. Dyneema



Controlling rotation: the bottom line limits the mast's maximum rotation and the top one determines its angle in relation to the boom

Tech spec

DRAGONFLY 25 SPORT

Prices: (ex-yard) £72,755.

Touring version £60,733

Length sailing: 7.65m (25ft 1in)

Length folded: 8.99m (29ft 6in)

Beam sailing: 5.80m (19ft 0in)

Beam folded: 2.30m (7ft 7in)

Draught, centreboard up: 0.35m (1ft 2in)

Draught, centreboard down: 1.50m (4ft 11in)

Weight: 1,050kg (2,315lb)

Sail area: 41sq m (441sq ft)

RCD category: B

Engine: 4-hp outboard

Distributor: Multihull Solutions,
www.multihullsolutions.co.uk



Curved spreaders eliminate interference with the vertically battened self-tacking jib

line does the job and the result is a pretty positive feel, if not quite as direct as with a single central rudder (assuming it's in the water). When you want to steer from the central hull – for manoeuvring with the outboard, or in toodling-around mode – you use the whipstaff in the cockpit. The only way to make the steering feel more direct would be to stiffen the cranked aluminium tiller tubes, but that's a detail. It seems unfair to criticise something like that when the structure has been designed and engineered in such a way that the steering still works perfectly with the floats folded in. That must have taken some serious geometrical jiggling.

Before we move on from performance-related matters for a moment, let's consider this: the Dragonfly 25 was raced in the Round the Island Race this year by a crew of three whose first time sailing the boat together was on the way over to Cowes the night before. Despite this – and having to rig a replacement tack line for the spinnaker after the original one burst off St Catherine's – they finished well up in the MOCRA fleet, their elapsed time of 6 hours 21 minutes being 23rd fastest of all 1,400-plus finishers in the race and faster than all but a handful of the professionally-campaigned grand prix 12m (40ft) monohulls.

In case you're wondering how she compares in performance terms with the Corsair Dash 750 (tested in PBO June 2014), the Dragonfly was just under 9 minutes ahead of the Dash *Nitric* but lost out by 3 minutes on corrected time. Everyone has their 'if only's' in a race like this. Al's are the slow start and broken tack



line, meaning they had to overtake *Nitric* twice. Two early versions of the Farrier F-22 were also racing, the first entered by a cruising owner who reckoned he could have chosen a better route and finished in 7h 48m.

Clever thinking

Everywhere you look on the Dragonfly it's clear that a lot of thought has gone into the boat. The design and structural sides are pretty impressive – assuming everything hangs together and keeps working, which seems probable given the number of Dragonflies from the '80s and '90s that are still going strong. Hull and deck are hand-laid and cored with Divinycell (except in way of the keel). Weight is kept to a minimum largely through simplicity: nothing is on the boat that doesn't serve a useful purpose.

The rudders are housed in stocks that hold them rigidly but allow them to kick up on impact. Other neat ideas include the halyard-tail pockets built into the



A rope-tidy pocket is built into the trampoline each side

trampolines. Open stowage bins are beneath the cockpit seats and there's a large locker under the sole abaft the traveller. Sails, fenders and light kit can be stowed in the centre section of each float between the watertight bulkheads at each end designed to prevent free-flow of water in the event of holing. The boat should stay afloat in any event thanks to the foam-cored construction: she's described as unsinkable.

Hardware is principally from Ronstan, with Andersen winches on the coachroof. Sails on the Sport version are Technora



ABOVE Through the hole to the heads. The ring frame between the beams has to be massively strong

LEFT Down the hatch: no luxury, but the accommodation is fine for coast-hopping and weekending

laminates with Ronstan batten cars for the mainsail. The forestay is the torque rope used for the jib-furling system.

Accommodation

You don't buy a sporty trimaran for luxury indoor living. The basics are there: two berths in the saloon (converting to a wall-to-wall double), a narrow V-berth in the bow for one adult or two kids, and a heads underneath it. Stowage for sails or an inflatable is abaft the companionway steps. With a boat of this size and nature you don't even consider standing headroom. More clever jiggling down here keeps the centreboard case out of the way: the berths are slightly offset to starboard and the centreboard is offset too.

It's light, airy and fine for weekending. The cockpit can be enclosed with a tent, and don't forget the large patio each side for dining al fresco, sunbathing, sleeping under the stars, playing badminton or whatever else might take your fancy.



Corsair Dash 750

PRICE: £57,600

Tested in PBO June 2014, she's based on Ian Farrier's F-24 design from 1991 but still looks good and does the business. *Nitric* is the best-known example in the UK, with a successful racing record.

■ www.multihullworld.com



Farrier F-22

PRICE (on trailer): £58,000

Described by Ian Farrier as 'a low-cost, entry-level trailable trimaran', she has been in development since 2008 and is now sailing on the South Coast. Available with a range of accommodation configurations and an optional aft cabin.

■ www.teamvmg.weebly.com



Astus 24

PRICE: £40,500

Big sister to the Astus 20.2 (also tested in PBO June 2014), she's built in France and uses telescopic beams to reduce her trailing width to 5.25m (17ft 3in). Weighs just 850kg (1,875lb).

■ www.multihullworld.com

PBO verdict

Despite her impressive performance, the Dragonfly 25 Sport is surprisingly easy to sail – unless you want to push the limits, when any boat will become more demanding. For many owners, the Touring version will provide more than ample performance and even simpler handling for around £12,000 less. If fast, trailable, beachable fun appeals to you, whether or not you have previously considered a multihull, it might be time to let a Dragonfly unfold her wings and show you how to fly.

Worthwhile watchkeeping



The NCI lookout at Peveril Point, Swanage is built on top of a concrete wartime blockhouse

Volunteer watchkeeper David Cornes describes the aims and duties of the National Coastwatch Institution – and encourages interested parties to get involved

One thing I missed after coming ashore as a navigating officer was watchkeeping. Not that I didn't welcome my relief at the end of the watch, and there were of course times when it was pitch black and nothing was happening; but I still missed the process of watchkeeping.

It is no surprise therefore that I find myself, 50-plus years later, as a volunteer watchkeeper at the Swanage lookout of the National Coastwatch Institution (NCI) at Peveril Point. The 270° panoramic view

from the lookout would cost a fortune for a developer, assuming permission would ever be given to build there. To the west is Swanage Pier and the end of the RNLI Swanage All Weather Lifeboat slipway; Old Harry Rocks lie to the north; Peveril Ledge Buoy lies to the east; and Durlston Point and Castle lie to the south.

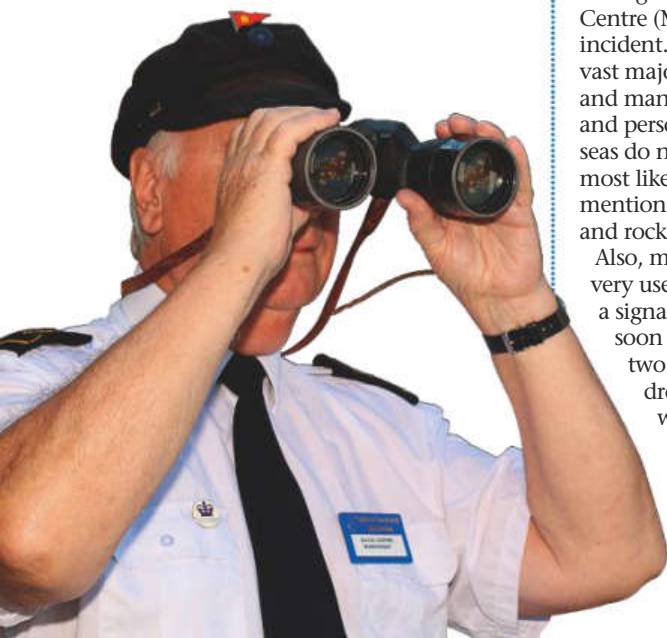
The NCI was formed in 1994 when the government decided to close all coastguard stations carrying out a visual watch on coastal waters. The argument presented to justify this closure was that all vessels carried radio and could contact the appropriate Coastguard Maritime Rescue Co-ordination Centre (MRCC) directly in the event of any incident. This always seemed dubious: the vast majority of the dinghies and kayaks and many of the small cruisers, speedboats and personal water craft that take to our seas do not carry radios, and are by far the most likely to require assistance – not to mention the anglers, rambblers, dog walkers and rock climbers who enjoy our shores.

Also, mobile phones, although potentially very useful, cannot be relied upon to find a signal along the coast. These misgivings soon proved to be well founded when two fishermen from Cadgwith drowned after their boat was lost within sight of the now unmanned coastguard station at Bass Point on the Lizard Peninsula in Cornwall. A group of locals decided this

was unacceptable, and pledged to re-establish a visual watch on a voluntary basis. They inspired the formation of the NCI, and still proudly claim to be the first NCI station. Our own NCI Swanage station was founded not long after, in April 1995.

At present there are around 50 NCI stations, currently all in England and Wales. All watchkeepers are volunteers, receiving no expenses and providing their own uniforms. Most stations are open between 0900-1600 in the winter and 0900-1800 in the summer, seven days a week, generally with two certified watchkeepers on duty for about four hours each. Some watchkeepers have a professional seafaring background, but all watchkeepers receive appropriate training.

Many stations have been taken over from redundant coastguard buildings, but some have been purpose-built by the volunteers. At Peveril Point, volunteers erected a lookout on top of a wartime blockhouse, with the support of local donors and businesses. All the stations' running expenses are not insignificant, so fundraising is ongoing. As a national organisation there are also some central expenses, but these are kept to a minimum.



Monitoring and logging

The function of the NCI stations is to monitor and log what is happening within each station's range. Positive identification of passing vessels is of course vital wherever possible. The station log may be examined and included in the official reports of any incident, for example by the Marine Accident Investigation Branch (MAIB). Stations liaise closely with the local Coastguard Marine Operations Centre (MOC) and inform them immediately of any ongoing or potential incident, either at sea or along the coast. The decision to call the MOC is taken by the senior watchkeeper on duty, and the MOC will decide whether to call on the available assets, for example RNLI lifeboats and the coastguard helicopter. Most NCI stations have, or are working towards, Declared Facility Status (DFS) from the Maritime and Coastguard Agency (MCA); this involves satisfying the MCA's criteria as appropriate for Search and Rescue organisations, and passing an annual inspection.

Equipment used varies for each station, and each has a 'wish list' of additional equipment they would like to acquire. At Swanage our equipment includes a radar/chart plotter with AIS reception, a large pair of binoculars on a stand, a telescope and extra pairs of binoculars. We also have five VHF radio sets: one is tuned 'Dual Watch' to the emergency channel 0 and the general distress and calling channel 16, while a second set scans channel 14 (Poole Harbour Control) and the local coastguard working channels: we are only permitted to transmit with the express permission of HMCG. The third set is tuned to Channel 65. We are licensed to transmit on this channel, and use it to liaise with the local sailing club when they are organising races: also, some of the local dive boats inform us of their destination and the number of persons on board when setting out from Swanage, with their probable time of return. NCI stations may also use Ch65 to give information on local facilities such as charted anchorages and availability of moorings and water-taxis. They may also

choose to make regular broadcasts of local weather and sea state conditions, but excluding forecasts. The channel can also be used for exercises. There are also two hand-held sets, one tuned to the 'ship' channel for the Duplex Ch65 and one to Ch37 used to communicate with local sailing and sea rowing club.

At Swanage, we also use a laptop to identify vessels which only transmit their MMSI number (Marine Mobile Service Identity), generally yachts, in their AIS data, via 'particulars of ship stations' (www.itu.int/online/mms/mars/ship_search.sh). We log in every day to www.metoffice.gov.uk/public/weather/marine-inshore-waters/#?tab=map for the local inshore waters forecast, and we can connect to www.marinetraffic.com/ais/home, which in the local area largely duplicates the information on our own AIS receiver, but can also show photographs of vessels (very useful for identification purposes), and of course extends outside our own immediate locality. We also have a digital weather station so we can log the local weather every two hours. Outside the lookout, an information board gives tidal and weather information for the public, and the old concrete building below has been outfitted as an information centre: it proudly displays our Queen's Award for Voluntary Service together with information about the locality. We also have a flagstaff where we fly a Union Flag when the station is open.

Vessel identification

A typical watch in winter can be very quiet, but in the summer it is very different: we can have over 100 entries, and when the Fastnet Race goes past as well it can get a bit manic! We try to identify all vessels by

name if possible: a name on the dodger of a sailing yacht is very useful. Sail numbers are also recorded, although an increasing number of yachts do not seem to display these. A name on the transom is often not legible because of the narrow aspect of the transom while the vessel is close enough to read it. Power cruisers are often particularly difficult to identify, especially if they have an inflatable stowed across the transom.

Failing a positive identification we note any significant features, ie 'defaced blue ensign', or 'red sprayhood', together with hull colour and approximate length. (To compensate, an increasing number of leisure vessels now fit AIS transmitters which give positive details.) A kayak group disappearing around Durlston Point will be reported by phone to the adjacent NCI station, St Alban's Head, who will return the compliment on the kayakers' return. Some kayak groups now carry a handheld VHF and issue passage reports to Portland Coastguard, and this practice can only be applauded. However, we are always aware that our function is not mere 'trainspotting' and priority is always given to monitoring more vulnerable water users.

Members of the public are always welcome to call into the station, so long as there is no incident in progress. At Swanage, we have a good working relationship with Solent NMOC, the local coastguard mobile team and Swanage RNLI Lifeboat Station. Incidents can vary from a dog falling over a cliff to loss of life: the NCI website (www.nci.org.uk) gives details of the many incidents NCI stations have been involved in. My personal involvement has included a pair of divers lost by a dive boat, a Personal Water Craft (PWC) driver thrown off and injured, broken-down yachts, boats breaking away from moorings, and an exhausted but luckily unharmed windsurfer.

As is well known, the MCA has been subject to an ongoing review of its budget, and further reorganisations have taken place. Our own MRCC, Portland Coastguard, closed on September 15 last year and its functions have been taken over by Solent National Marine Operations Centre (NMOC), which has responsibility for most of the South Coast, from Beachy Head in East Sussex to Topsham on the River Exe in Devon. This whole area is subject to intense maritime activity, and it remains to be seen whether the replacement 'mega-MRCC' will cope satisfactorily. However, the first year of operation has seen the development of a working relationship. (The loss of the Portland Coastguard Helicopter, Rescue 106, in 2017 is another issue entirely.)

There is no indication at present of the future development of the relationship between the NCI and the MCA: however, it can hardly diminish the NCI's role. I would urge anyone interested in watchkeeping and not too far from the coast to seek out their nearest NCI station and ask about volunteering. The NCI website shows the locations of all current stations with contact details.

Peeveril Ledges lie to the east of the NCI Swanage lookout



The senior watchkeeper decides whether a potential incident warrants a call to the MOC, and the MOC in turn will decide whether to call upon available assets such as RNLI lifeboats and the coastguard helicopter



Diesel polishing

‘Shiny diesel is happy diesel’, maintains Damian Walker, whose engine stoppage woes were cured by diesel polishing

The end of another windy summer was fast approaching and the nights were getting noticeably longer, but I reasoned that there would be an opportunity for one more single-handed trip in *Delta*, my Colvic Watson motor-sailer, before the season ended. I had planned to motor-sail northwards from Lowestoft and revisit my favourite place, Whitby, stopping along the way at Wells-next-the-Sea, Grimsby and perhaps Bridlington and Scarborough.

The 12-hour passage to Wells had been choppy, uncomfortable and tiring, and I accepted an offer from the Beach Patrol RIB to guide me into Wells Harbour, where I went alongside the visitor pontoon.

After a good night's sleep, I was just about to cast off, having unplugged the electricity cable, when the engine stalled. It would not run for more than a few seconds at a time, and then only with the throttle near wide open. I was unsure whether it was just fuel starvation or perhaps an air leak. I quickly reconnected the electricity supply to keep the battery charging: the two solar panels were only providing an amp or so. I managed to change the Champion filter for a Crosland as the 5-micron Champion seemed to clog easily.

At last I was happy to leave,

relying on being able to switch to the second filter as I approached Grimsby if there was any sign of fuel starvation.

A few weeks earlier I had visited Lowestoft Yacht Services when the engine had stopped just as I was approaching their service berth. That failure was also due to a dirty Champion L131 5-micron fuel filter. I isolated that filter, cleaned the bowl and replaced the three in-line filters, one on the engine and the two set for changeover in the event of a blockage. I considered myself fortunate that after fitting another new Champion filter the fuel filled the bowl under gravity from *Delta*'s 30-something-year-old stainless steel tanks, and the CAV filter needed minimal bleeding to remove residual air. The engine fired up again and ran sweetly as I returned to my mooring in Lowestoft Haven, so when planning my late holiday trip north I was confident that I had three clean and new filters.

I arrived in Grimsby on the Sunday night, but on the Monday morning *Delta*'s engine stopped again while I was attempting to move position on the moorings. I attempted a restart, and the engine started for just enough time with the throttle wide open to attain a high rpm and rapidly switch from forward to aft gear before it failed again. I lifted the starboard floor



Delta, Damian Walker's Colvic Watson motor-sailer

panel, reached down and switched to the spare filter, and after a reasonable but shaky start it ran for some seconds at high rpm, whereupon the fuel lines were replenished with fuel. I was still unsure if there was an air leak as it had started after the overnight rest, but again only ran for a short while. I managed to change moorings with the aid of some typically friendly berth-holders, and settled down to work out how to cure my now obviously serious fuel problem.

I was given contact details for an engineer called Fozzie, who generally did work for visitors with boat problems and had a good record of problem solving. He offered me the use of a pump to

empty the tanks via the fuel sender opening, but I declined until I knew the extent of the problem facing me. I knew for sure that I had two interconnected tanks with around 300lt in total of dirty diesel that had been standing for nearly two years owing to essential repairs that meant the boat had been forced to stay on the hardstanding.

Polished performance

I'd had the foresight to add a bottle of Marine 16 diesel bug treatment in 2011 after buying the boat and some Marine 16 fuel stabiliser in 2013 during winterising. I knew that the tank sides were not polished and smooth after fitting a standpipe for the Eberspächer a few weeks earlier, which required a



After this bottle of contaminated fuel had settled overnight, a heavy layer of dead diesel bug was apparent: some of it remained in suspension, giving a darkened, cloudy appearance to the red diesel

ABOUT THE AUTHOR



Damian Walker is a recently retired flying instructor and aerial photographer. Having cruised for 3,000 miles, he has passed Yachtmaster theory, Day Skipper practical and RYA certificates for radar, diesel CEVNI and first aid, and may now have the time to do more, health permitting.



A filter bowl cracked during the 101-mile motor-sail home



The blocked filter

hole to be cut in the top of the tank: when I inserted the standpipe it had touched the side of the tank, which felt 'furry'. My response on that occasion was to fit a separate filter just for the heater's newly re-piped supply, although in hindsight that was a hasty action and not a solution. It was suggested that I should discard the fuel, steam-clean the tanks and start again, but that seemed excessive. I searched online for fuel containers, but decided this was too lengthy and expensive a solution, and not really feasible in my situation.

The tank lids were made of stainless steel: I was willing to fit the innovative Wema tank lids from Tek-Tanks, but was worried about what I might find under the plates if the orifice was not a 112mm round hole, and the six plates appeared to be screwed into place with Sikaflex sealing compound. I believed that I needed them to stay sealed, at least until I got back to base in Lowestoft. Next, I searched Google for advice about dealing with fuel tank contamination, but found nothing directly relevant to me, given that I was not a bulk fuel user with 1,000lt tanks, nor was I presenting a significant environmental hazard.

However, I came across a term that, although I had heard it before, meant little to me. Only two weeks previously, Andy – a visitor to

Lowestoft on another Colvic Watson – had shown me his comprehensive engine management systems including a fuel-polishing filter. I had not really grasped how this could be such a critical part of the overall fuel management system, but was beginning to realise the truth of it. I searched online again and found the family-run business www.dieselpolishing.co.uk: the company's Allen Blake (a friendly Yorkshire boat owner) was willing to help me, and drove down from his base near Leeds. He twice filtered the entire dirty contents of my tanks with the system pictured below, agitating the contents with the returning fuel over a period of four hours. The black sludge-like layer at the bottom of the tank had settled somewhat over 48 hours but only contained mostly dead diesel bugs that had coagulated and made the filter bowl look like a shaken snow globe, except



The system shown here was used to twice filter the entire dirty contents of my tanks



I replaced the pretty clean Crosland filter with this Fram filter

with black snow falling.

The black stuff was easily removed, although not all at once as the filter in Allen's system would have been blocked quite quickly. A tiered approach gradually cleaned it up. We only had to discard 9lt of liquid, and some of that could have been recovered or recycled if we'd had more time as there did not seem to be much water in it.

After only four hours' work I had 300lt of shiny red diesel back in my tanks again and ready to flow

through yet another new filter, a Crosland one this time. I motor-sailed the 101 miles back to base, stopping the engine after 20 hours and 20 minutes with plenty of diesel left in the tanks. I found that a filter bowl was cracked and went to ASAP Supplies for a replacement, changing the pretty clean Crosland filter for a Fram. Now, the only weak point left in the fuel system is the banjo bolt on the top of the Iveco engine-mounted filter, and that is on order.

PBO verdict

A good investment

To build a DIY system, a small diesel polishing filter with a 140lph circulating pump can be bought online for less than £100: professional systems can cost in the region of £500, but would seem to be a good investment even at commercial prices. I have been advised that a small solar panel connected to the pump should suffice to protect the fuel over the winter when moisture allows the bacteria to grow rapidly.

The diesel bug problem was initiated when biodiesel began to be added to the fuel back in 1998. Biocides like Marine 16 products quickly kill

the bugs, which then coagulate and stay in clumps in suspension but in a low layer in the tank. The answer quite simply is a turbine filter with a pump for use especially when the engine is not running, and maybe when any fuel sediment has been stirred up.

It seems obvious now that a blocked filter will almost inevitably result in an engine stoppage unless the fuel is cleaned. When in the RAF, my flight sergeant in basic training used to say 'shiny shoes is happy shoes' and 'shiny diesel is happy diesel' is equally applicable.



12 padlocks



Ben Meakins utilises a saltwater spray tank, bolt croppers and a hacksaw to assess the effectiveness (or otherwise) of a selection of padlocks when it comes to preventing boat break-ins

We all know that the marine environment is hard on things like padlocks – that's why we tend to look for 'weatherproof' locks and equipment where possible. But, as we found out in this test, a label that says 'waterproof' or 'weatherproof' is no guarantee that a padlock will stand up to the salty, damp environment found on a small boat.

Our padlocks ranged in price from £2.50 to £16. At the cheapest end, our 'weatherproof' padlock was made from laminated steel, and its only sop to waterproofing was an ill-fitting plastic casing. This took a mere 6 seconds to break into. At the other end of the scale, we had a 70mm hardened steel 'weatherproof' lock. This had also rusted, although not as badly – but it took a good 10 minutes to break open with a hacksaw.

OK, you think, let's go for stainless steel – it won't corrode. But the problem with stainless is that it's a much softer material than the hardened steel found in high-security padlocks. However, hardened steel is much less resistant to corrosion – it's a tricky balance.

It surprised us just how easily even the most fearsome-looking padlock succumbed to a pair of bolt-croppers, which makes the decision even harder. As with most things in

life, a compromise is needed. One compromise is to go for a high-quality stainless-steel lock with a hasp design that makes it almost impossible to get the bolt croppers in – but how would a range of commonly available 'weatherproof' padlocks stand up to salt and a determined thief? With the assistance of supplier www.nothingbutpadlocks.com, we collected 12 together and set to work.

How we tested them

We placed our selection of padlocks in a saltwater spray tank. This subjected them to a 10-second drenching every hour, spraying warm, salty water over the padlocks. These are difficult conditions for any metal to put up with, and would soon show which products were susceptible to corrosion.

We left them in the tank for a month, which would simulate more than a year of normal use. When we removed them, we tried a key in each one to see how well the innards had stood up to the abuse, before examining the exterior for corrosion and rust. This done, we could begin to try breaking in.

Using a set of 18in bolt croppers, we timed how long it would take to cut the shackle of each padlock. If the bolt croppers didn't work or wouldn't fit, we resorted to a hacksaw.

Padlocks on test...

Faithfull Brass Weatherproof padlock

PRICE: £9.55

Attack resistance: 22 secs

The packet for this hefty lock claims a 'weatherproof PVC coating, hardened steel shackle and high security.' It has a sliding cover for the keyhole. After a month in our salt spray tank it was jammed with salty deposits. After rinsing off, some corrosion around the key was evident as well as the shackle, and the key was hard to turn, requiring plenty of force. It took a lot of effort and 22 seconds to break through with our bolt croppers – and the design of the body aimed to minimise the chance of getting the bolt croppers in. Our hasp made it easy, but some others might be harder to access.



Result after a month in the salt spray tank

ABUS Marine 701B/45

PRICE: £12.60

Attack resistance: 8 secs

This 'marine' padlock comes encased in plastic with a snug-fitting seal for the keyhole. It's claimed to be '100% rust free' and 'saltwater-resistant'. After its stay in our tank, there was some rusty deposit on the outside of the casing and a little green corrosion around the keyhole, but the lock opened easily and was otherwise unaffected. It took us 8 seconds with the bolt croppers to break in.



Breaking in took 8 seconds with bolt croppers

Sterling 70mm closed shackle padlock

PRICE: £18.20

Attack resistance: 10 mins

Described on the packet as 'mid-security', this padlock was the biggest on test. It comprises a steel padlock with removable hardened steel shackle, and is described as weather-resistant. However, after a month in the tank the shackle had gone very rusty, and the interior was full of salty corrosion. Nonetheless, it put up a good fight, as could be expected for a hardened steel shackle 10mm in diameter. The bolt croppers bounced off, and it took us nearly 10 minutes to break in with a hacksaw.



A hacksaw took nearly 10 minutes to break in

Yale 51mm Weatherproof padlock Y220/51

PRICE: £14.99

Attack resistance: 6 secs

This weatherproof padlock is a laminated steel padlock encased in a heavy-duty plastic cover. The cover did a good job of keeping damage at bay, although some salty water did make its way in: some corrosion was visible inside the case when we disassembled it for inspection. The shackle, made from boron and encased in its cover, was unaffected, even where it met the main body of the padlock, thanks to a good rubber O-ring seal. Breaking into it took 6 seconds.



Breaking into this padlock took 6 seconds

Rolson 40mm Laminated waterproof padlock

PRICE: £2.50

Attack resistance: 6 seconds

This cheap padlock featured an ill-fitting plastic cover and key cover and a chrome-plated shackle. After a month in the tank, the shackle was unaffected, but the innards of the lock had rotted from the inside. The key couldn't be turned, even after rinsing and lubricating. The coating on the laminated padlock had kept the salt at bay for a while, but it was showing signs of corrosion when we examined it. It took us 6 seconds with the bolt croppers to break in.



The lock had rotted from the inside

ABUS Diskus 24iB/50

PRICE: £16.11

Attack resistance: 8 minutes

Described as 'optimum protection' due to its shape, which minimises the visible shackle to make it harder to attack with bolt croppers and hacksaws, this disc lock has a stainless steel body and shackle. It was unaffected by corrosion in the tank and proved very difficult to break into. The problem was getting the croppers to bite as the space available was very limited. A better hasp would further reduce the available space. We eventually managed it, but this wasn't enough to release the lock, which remained stubbornly on the hasp. The circular design means that the shackle won't retract without the key, so a second cut is required. This proved a problem, as access was impossible from underneath. A hacksaw eventually finished the job after much laborious sawing from the bottom up that would be tricky on some washboard designs.



The lock remained stubbornly on the hasp

Small padlocks

We tried two small brass padlocks that were identical in appearance, but one had a stainless steel shackle and the other had hardened steel.

Abus Brass Padlock 65IB/30

PRICE: £8.81

Attack resistance: 1 second

This one had a brass body, and a stainless steel shackle. After its residence in our tank, there were no signs of corrosion and the lock operated normally. It took only 1 second and an easy 'snip' with our bolt croppers to break in.



Abus Brass Padlock 65/30

PRICE: £6.55

Attack resistance: 4 seconds

Identical in appearance to the other small padlock. This one had a hardened steel shackle and a brass body. After the tank, the shackle had begun to rust and there was some green corrosion visible around the keyhole and some resistance to the key. It proved more resilient to the bolt croppers than the stainless version, but still took only 4 seconds to break into.

...more padlocks on test

Zone 900 Weatherproof padlock

PRICE: £9.64

Attack resistance: 6 seconds

This laminated padlock, encased in plastic with rubber seals, was similar at first glance to the Rolson padlock but is much better made, with a tight-fitting plastic cover that kept corrosion at bay. Some rust was visible around the keyhole and inside the case, where water had penetrated via the shackle holes. The key had become hard to turn and required lubrication and some working back and forth to return to normal. The shackle, made from hardened steel, had begun to rust at a fault in the plastic covering but was unaffected for most of its length. It took 6 seconds to cut the shackle.



Water had penetrated via the shackle hole

Masterlock WeatherTough padlock

PRICE: £8.87

Attack resistance: 2 secs

Described as suitable for sheds, gates and boats, this lock has a hardened steel shackle and a laminated body with a plastic cover and dust cap that fits over the keyhole. The insides were beginning to corrode after a month in the tank, with no rust. The cover didn't fit particularly well, and let some water in – and the key was also hard to turn. It took us only 2 seconds to break in with the bolt croppers.



Internal corrosion after a month in the tank

These two padlocks were similar versions of the same thing. They were both described as suitable for sheds, vans, boats, vans and gates, with the difference being that one had a stainless shackle and the other was hardened steel.

Squire All-terrain padlock ATL4

PRICE: £10.29

Attack resistance: 31 seconds

Described as 'weather protected', this 'all-terrain padlock' has a solid brass body with protective cover and a hardened steel shackle. A hinged cover secures the keyhole. After a month in the tank a small amount of corrosion was visible around the keyhole, but the shackle was clear. A small amount of salt corrosion was visible internally, but the mechanism worked well. It took 31 seconds and a lot of effort to break in with the bolt croppers.



Much effort was needed with the bolt croppers

Squire Rustproof Lock ATL4S

PRICE: £12.35

Attack resistance: 27 seconds

Identical to the all-terrain padlock apart from the stainless shackle, this lock is described as rustproof. This had no corrosion visible – the interior was clear and the keyhole had no rust at all. The internal workings were also unaffected. It took marginally less time than the hardened shackle to break in, but still required a lot of effort with the bolt croppers.



The internal workings were unaffected

PBO verdict

This test was eye-opening in that it showed just how easy it is to break into most padlocks. It highlights a major dilemma when choosing a padlock: you can't just blindly buy a 'weatherproof' one and assume it'll be OK on your boat.

There is an interesting compromise between stainless (higher corrosion resistance) and hardened steel (greater cutting resistance) – although the difference in break-in time, a matter of seconds, leads me to suspect that you'd be better off avoiding corrosion with a true weatherproof lock as it'll offer much the same level of resistance to break-in while lasting much longer in the marine environment.

The best lock on test was the ABUS Diskus lock, which made access for the bolt croppers almost unachievable. The design of your washboards could make it

impossible, for instance if it was under a ledge or the edge of a sliding hatch. We eventually managed to break in, but after a struggle.

Of the other locks, the Squire Rustproof lock was a good corrosion-proof design that lasted well, and the chunky Sterling closed shackle lock put up a valiant struggle but didn't cope well with the corrosion.

Hasp design is important – choosing one which conceals as much of the shackle as possible will do more to secure your boat than padlock choice. Our advice is to choose the best, most corrosion-proof lock you can and combine it with a good hasp to act as the best deterrent possible.

■ Thanks to Nothing But Padlocks (www.nothingbutpadlocks.com) for their help with this article

Ground tackle tackled

Lindsey Blow explains how investing in a new windlass and anchor chain restored her confidence in her boat's ground tackle

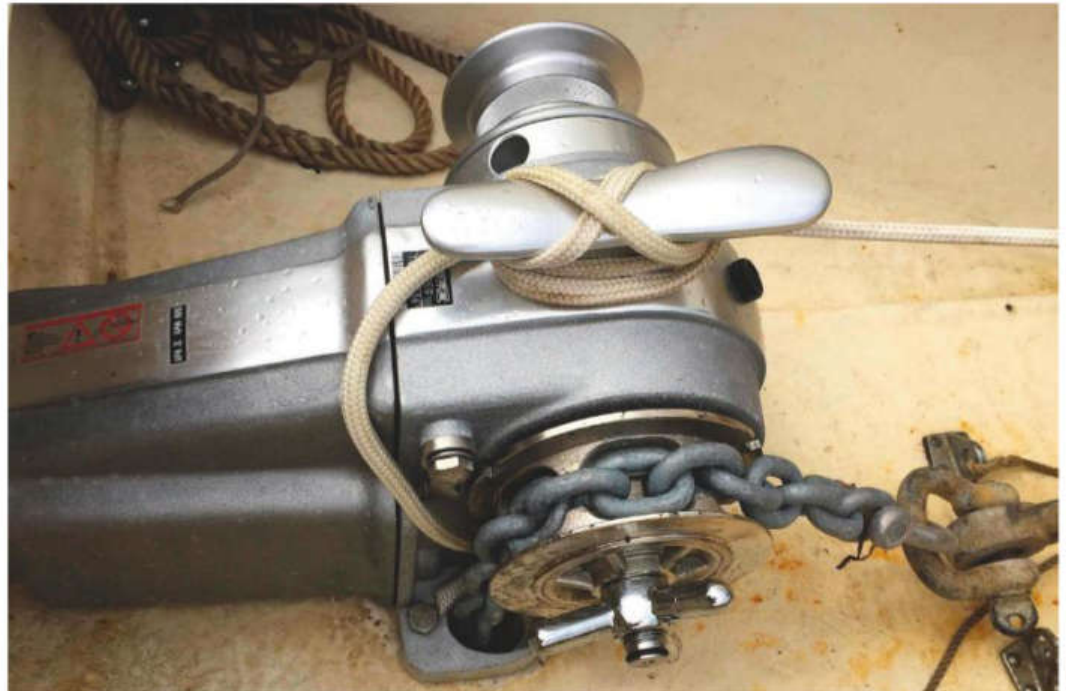
Last summer our anchor slipped, but not in the way you would expect. We were anchored in Loch Eatharna on the east side of Coll, a lovely natural bay with a pub in Arinagour village at the head of the loch. Out of the corner of my eye, I noticed a couple of yards of chain falling over the bow roller: luckily we were still on board when it happened.

The immediate situation was easily resolved by attaching a strop through the anchor chain and lashing it off on the forward cleat, which is something we should have been doing all along!

For the rest of that summer we had no confidence in our anchor windlass, which now failed to haul the anchor aboard. Each time we set it, we knew recovery would be a manual haul aboard: our boat *Sally* is a 12.5m (41ft) Rival and our anchor weighs 22kg, so this was a task I had to hand over to my husband. We try to make sure all tasks aboard can be managed by both of us in case of an emergency, so relying on his superior muscle power was not something either of us felt comfortable with.

Once home and hauled out, we unloaded the anchor chain from the bow in preparation for servicing the windlass. The anchor chain we had been relying on was worryingly rusty in places, so we contacted our local rigger about replacing it. He had only two questions for us – 'How much do you want?' and 'Is it 10mm or 8mm?' Easy! '60m of 10mm chain, please.'

Meanwhile, we got on with



The new windlass as fitted: the chain is a perfect fit in the gypsy

servicing the windlass, a Lofrans Tigress, using an excellent YouTube video, and ordered a service pack from Lofrans' UK distributor. The first step was to release the gypsy wheel and strip down the clutch. The Tigress has an independent gypsy and drum operation, and despite locking off the drum with a line wrapped five times and cleated, I could not shift the gypsy wheel. Again we called our rigger, who took a blowtorch and hammer to it. That did the trick, and I was able to strip down both the gypsy and drum mechanisms, cleaning up lots of thickened grease which had

accumulated on both sides of the windlass mechanism. I replaced this with nice clean silicone grease, and did up the gypsy wheel tightly. There were a couple of score marks on the clutch drums, but that wasn't bad going considering the windlass probably dated from 1983.

Loading the new chain

It was now time to load the new chain. The boatyard staff forklifted it over to beneath our bow and, attaching the bitter end, I started the windlass which, disappointingly, still slipped. More interestingly, the new chain did not quite fit into the gypsy wheel as well as the old rusty one had. I measured the new chain link diameter, which was indeed 10mm, but the new links seemed ever so slightly shorter than the old links. What we didn't know, and have since discovered, is that anchor chains in Europe are made to two standards, DIN 766 and ISO 4565. With all chain sizes other than 10mm, these two standards are identical: our gypsy was built for ISO 4565 standard and the new

chain was DIN 766, and therefore each link was just 2mm short of being a perfect fit. We would have to either change the chain, the gypsy wheel or the whole windlass.

With the windlass still slipping, there was nothing for it but to remove the entire assembly and take it to a workbench for a proper inspection, where we discovered that the central shaft was bent. We needed a new windlass, then.

We had by now discovered a new acronym, BOAT – 'break out another thousand' – because in our (short) experience as boat owners most things appeared to cost about £2,000, so a new Tigress windlass at less than £1,000 seemed a real bargain!

Fitting it was easy enough, although the new Tigress was rated at 1,500W, 500W more than the previous one, so a new higher-rated circuit breaker needed to be installed in the switch cupboard. We have since anchored with confidence, and will always use a strop on the anchor chain to release the strain on the windlass.



The old anchor chain...



...and the new chain, each link 2mm short of being a perfect fit

Drop-in service and a smashing time



In the space of a short cruise between Conwy and Howth, Don Fitzroy Smith's boat gets used for a winching exercise – and target practice

We sailed from our Conwy base round Carmel Head and paused overnight at Holyhead Marina before sailing for

Dún Laoghaire the next day. As we departed we were making 5-6 knots in a good southerly wind but it deserted us, so we handed the genoa and motor-sailed. The flood tide was running north and was stronger than anticipated so we were concentrating on keeping clear of the Carmel Head TSS if possible – and if not, crossing it appropriately.

Off South Stack, a Sea King helicopter was exercising with a Smit workboat and it then flew our way, did a half orbit around us and came to a low hover 50m off our starboard quarter. We could see the crew in the starboard door very clearly, but the tremendous din and clatter drowned their first attempts at communication. The handheld VHF in the cockpit was barely audible as the crew came up on Ch16 again. 'White yacht out of Holyhead, sail number 8713T, this is Sea King two-two, over.'

On the working channel, all became clear: they wanted a new playmate. Exercising with the

high-speed ferries doing 30 or more knots is one thing, but it's quite a different proposition with a yacht doing six knots. I confirmed our course and speed to the Sea King as my son Peter got his Go-Pro camera and took up a vantage point in the pushpit.

My wife Melanie was at the helm, steering as straight a course as she could, which became far more challenging as the

helicopter got nearer and nearer. The noise increased, there was spray everywhere and a wicked downdraught. Foreign objects and debris (FOD) are a problem for all aero engines, so it was off with our caps as I posted them down

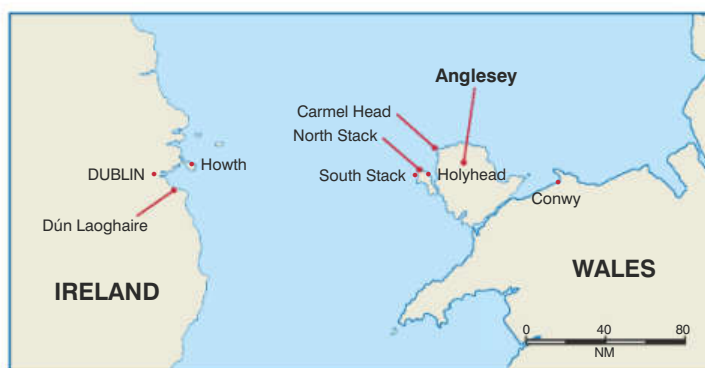
the companionway, along with anything else that might become airborne. Despite sheeting the main in tight amidships it protested quite a bit in the downdraught, and Melanie had her hands full. The winch man dangled, spinning slowly, as he tried air-walking to maintain a forward view while the aircraft crept closer. Communication in our cockpit was difficult, so we shouted with cupped hands. I was unlikely to hear the handheld VHF I was holding,

It was a fusion of comedies – Captain Mainwaring appearing on deck, flushed, spectacles and cap askew, spluttering...

but in the comparative quiet at the chart table it would have been better. Creeping closer and closer, the winch man reached out and finally touched our pushpit, then the helicopter pulled away, dunking his feet before hoisting him back aboard.

Objective achieved, they signed off and flew away to RAF Valley, leaving us to appreciate the quiet but also the benefits of exercising winching with a helicopter in daylight and good conditions. Should we ever require their assistance in a real-life situation, my family feel a great deal more confident about the prospects.

Off Dún Laoghaire we dodged and weaved our way through the yachts racing offshore and were offered a hammerhead berth close to the marina facilities, just



across from the Royal Irish Yacht Club. It was a good vantage point: there was lots going on as dinghies and keelboats were launched for races and recovered afterwards. Sailing is a serious business in this town, with four major clubs based here. Security was efficient via fingerprint recognition at the gate, so there was no number to forget after a good run ashore.

The marina was close to town and the railway station, so we went to Dublin (family ticket €19.65), getting off at Tara

Street on the south bank of the Liffey. From there we went to Trinity College Dublin and then it was a mandatory stroll up Grafton Street, past

the buzz of all the street artists and entertainers, to Bewley's coffee house, oft frequented by my father and sister in their undergraduate days. When we were scarcely inside the heavens opened, accompanied by thunder and lightning, and there we stayed to enjoy the old-world charms of this famous establishment.

A violent thump

Moving on to Howth, we were berthed on a hammerhead once more, adjacent to a secondary fairway leading to the public slipway. We had visited Howth before and had enjoyed it and the local seafood, but this time would be different. I was below passage planning for our return to Holyhead when I became aware of a motorboat approaching. The noise rapidly

ABOUT THE AUTHOR



Don Fitzroy Smith sails *Aoife*, a Jeanneau Sun Odyssey 32. Don has chartered, sailed widely on sail training yachts and his family sail, too. He has a Yachtmaster Ocean qualification.



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with Dublin but could do little to assist otherwise. With sobriety in mind I went to the Garda, who weren't much help either: so, having had little joy, I rang an Irish friend of mine at home. He made a few calls of his own and rang me back recommending I call the Marine Survey Office in Dublin as they control licensing of all Irish commercial vessels. I did so, and they sent an inspector the day after we left, but I don't know the outcome. Finally I sat down, spoke to my insurance company and made some contemporaneous notes. It had been a busy afternoon.

Fit to sail home

The boat had received a sizeable thwack, but the damage was not as great as we initially feared – damage to several areas on our topsides, a bent stanchion and a strained guardwire. We were relieved when a local surveyor, Fergus O'Kelly, checked over the boat and pronounced us fit to sail home.

We were enjoying our sail to Holyhead when the southerly wind increased and brought in rain. We put in two reefs and sailed on without any further problems until close in to North Stack, where we were well beaten up by strong down-gusts from Holyhead Mountain – but that's normal for

North Stack. The next day we sailed an hour-and-a-half before low water Holyhead for Carmel Head and had a straightforward passage back to Conwy in the sunshine.

It was a short but action-packed cruise, we have since made good the damage and been reimbursed. Before the collision I was unimpressed with the stumpy emergency tiller Jeanneau had provided; it was cheap, poorly galvanised and delivered minimal leverage so it was almost useless. Does that sound at all familiar? Using some basic physics I've since re-engineered the tiller to produce something that is compact, light, usable and effective. But that's another story.

increased to a crescendo when I felt a violent thump, heard a crunch and a crack and felt a sharp lurch as the boat hit us, almost knocking me off my seat. I shot up the companionway steps to see a workboat motoring away, speed unchecked, with the man in the wheelhouse calling back to us that he would sort it.

It was a fusion of comedies – Captain Mainwaring appearing on deck, flushed, spectacles and cap askew, spluttering, spitting feathers and shouting words such as 'Stupid boy!' as Basil Fawlty's favourite builder motored away from him. And yes, he really did say 'A lick of paint and it'll be fine.'

I met the skipper at the slipway. His steering had failed, but he had motored down the fairway at his usual brisk pace under jury steering, all but blind. The

skipper, rather short of limb, was straining on tiptoe to see ahead through the bridge window and the taller crew had his head down, managing the jury rudder on the skipper's instructions, and couldn't see past the bridge either. Meeting his mate in a narrow fairway he had not slowed down, but veered off to starboard and rammed us on our hammerhead mooring. I came on board and verified that their wheel was out of action before testing the jury steering, which was next to useless – a short lever with 30° of play in either direction before anything happened.

The marina staff saw the incident and directed me to the harbour master, who took the details to register a vessel contact

*Send us your boating experience story and if it's published you'll receive the original Dick Everitt-signed watercolour which is printed with the article. You'll find PBO's contact details on page 5.

Fitting solar panels

Keen to fit effective but relatively discreet solar panels to his boat, Trevor Martin gives the matter some thought, and has a brainwave...

I wanted to fit solar panels to my boat, but didn't know how to go about it, nor did I know how other people went about fitting them.

I looked at about 1,000 boats in three marinas: now, these panels are no works of art, yet they dominate deck space if any real power other than just battery maintenance is going to be produced. 'Hey, look at my new panels and associated half-ton of tubular stainless gantry' seems to have taken over from 'hey, look at my new bird-scarer'.

I didn't want to use the 'less efficient for your money' flexible walk-on ones as I knew that they would get dirty and scratched at the least; and we didn't want to be checking for grit on our deck shoes when dashing for a warp, did we? Some panels were hung outboard, and some precluded the use of the best sunbathing or cocktails position. A few were even hung vertically from the rigging: that's ok for sunsets or when the boat's seriously heeled, I guess, but surely they kick out less when they are at such an oblique angle to the sun?

On my huge or diminutive Moody 36 CC, depending on who I am berthed beside, the only area that I didn't stomp across was the aft cabin roof. Due to the positioning of the mainsheet traveller, the tendency was to step diagonally out of the cockpit onto the side deck to access the stern. A quick measurement and an hour on the laptop showed one panel that would just fit either side of the aft hatch, but two of those at only 30W max each was still far off my estimated need for 100W plus.

I just couldn't contemplate having



a stainless Eiffel Tower on my stern, so I got to thinking. I only wanted this power in the marina or at anchor: when sailing, I needed none or very little. The solution seemed obvious, except that when you have a brilliant idea, you have to ask yourself: why hasn't anyone else done that? The idea was to have two panels each side, hinged so they could unfold to utilise all four or fold flat where only two

would be in use. It got better. With my trusty tape measure, I realised that if carefully positioned, a variety of arrays could be achieved to suit the sun, the cosmetics or a compromise.

A week later, the flaw occurred to me. If you wire two panels in parallel, as you should for an array to maintain standard voltage (which for solar is about 19V), then place one facing down and one facing up, will not the energy collected from the skyward-facing one discharge from the shadowy deck-facing one before the current even gets to the regulator/controller inside the boat? Panels over 10W rarely have a blocking diode to prevent return flow discharge. I had this image of a gentle glow between the lower panel and the deck with no

electric going to the batteries, all at great expense! Then it was pointed out to me that the folding briefcase caravan-type panels would suffer the same fate, and they don't. My back-up plan was to put a magnetic proximity switch between the frames to cut off the supply from the lower one when they were folded, if it proved necessary, as no one could tell me for sure what would occur. The proximity switch was an inspiration from when I opened the fridge door and the light came on, in both respects!

Potential pitfalls

I will let the pictures do the talking as plenty of worthwhile articles, far more technical than I could manage, have already been published. I will however just

ABOUT THE AUTHOR



Trevor Martin has been sailing since the age of 12, owning a Silhouette Mk2 at Chichester, a Snapdragon 24 in La Roche-Bernard and now his Moody 36, berthed in Plymouth Yacht Haven. He has sailed in the Lake District, Sweden and Malta. Most of his work has been in children's services and outdoor education.

mention a few pitfalls that I encountered or avoided.

■ Get daylight panels, not direct sunlight ones that are still available and deceptively discounted. I used 'PV Logic' supplied by BBL's Plymouth branch, who were really helpful.

■ Source real cable, not the spare from the house lampshade rewire. Western Electrical set me straight with a whopping current capacity within 2.5mm² section twin-core, tinned and insulated cable for marine use (Oceanflex 2.5x2). This maxed on reduced resistance, longevity in marine environment and, more important for me, had a small cross-section for feeding into the boat and generally squeezing through funny cavities. In fact, it had the same overall diameter as the 1mm² cable supplied with the panels!

■ I didn't have to remove the headliner as I passed the cables through between fittings: I used the air vent deck contour area for entry. Cable length to controller and battery bank was less than 3m. I am a marine sealant rebel, so all sealing was done with my favourite, theWORKS from Geocel, which has not failed any application I have ever used it on. I decided not to use deck glands.

■ When drilling the PV solar panel frame, I was delighted to see that it was so rigid due to a twin-wall construction, but this meant you had to be very careful when siting holes for hinges and the pivot bolts, otherwise you are too close to the glass or the sealing silicone on the underside.

■ Considering the panel instructions to allow an air gap, I was still able to keep the pivot brackets to 70mm high, although I now think they would not have looked out of place at 80mm. I did isolate the stainless steel hinges from the aluminium frames, but am wondering why I bothered. I may add drainage holes in the 'lower' edges of the frames if water

▼ ATTACHING THE HINGED PANELS



Separate hinges seemed more aesthetic than the 'piano' type



Wingbolt on panel edge slides into groove in pillar, locking it in place



The hinges are screwed tightly into position



Sealant is applied to the 'axis' pillar base



Cables are passed through the air vent deck contour area



Door hinge from a glass cabinet is mounted on the opposite pillar



The cables are 'mouse-lined' between headliner fittings



Proper marine cable: the junction box was later filled with silicone

collects there, but it hasn't done so yet. It takes rather a big sea to wash over the aft cabin on this boat!

■ The controller is a cheap 10A PWM type from EP, which allows for an extra panel, but a 20A version was easily available. I uprated the fuse between controller and battery to 7.5A.

■ I was able to mount the

controller within 50cm of the domestic battery bank. When the aft cabin door is open, it hides the controller, which suits me!

■ Lastly, and oddly the hardest bit, was designing a locating/locking bracket to prevent the panels moving in their chosen position. I'm still working on a neat and simple version: I wouldn't want

anyone to think that I have actually finished a project that I've started...

The trial bracket features a glass cabinet door hinge, mounted on an aluminium L-shaped pillar so that when the doubled solar panel swings down, its radius doesn't hit the bracket when open. Then it is click-locked with a firm press, sufficient to stop the panels lifting by motion, sea or wind. I have added rubber pads to certain parts for protection and cosmetics.

When the hinged pair of panels is in the 'apex' configuration, the edge of the inboard panel nestles on a foam pad, having engaged a slot in the side of the pillar, and is locked into place with a wing bolt fitted to the panel itself. The same wing bolts on the port and starboard assemblies could be used to link the panels in what I call the Star Wars Fury-class configuration! As time goes on, I may have all the support brackets refabricated in stainless steel. In the unfolded position, I still think the panels are an eyesore, but folded down, I find their aspect and 'potential' quite a pleasing view. By the way, they work really well. **#30**



The controller is a cheap 10A PWM type from EP...



...which is hidden behind the aft cabin door

Readers' cruising destinations, near and far

We pay for your published cruising stories and harbour updates. Email pbo@timeinc.com or write to the address at the top of page 5

All pictures by Sarah Norbury



Puerto Calero Marina nestles in the lee of Lanzarote's magnificent volcanoes and is home to a growing number of British yachts



The year-round allure of Lanzarote

This popular island in the Canaries is well worth considering if you're looking for a sunny home for your boat, says Sarah Norbury

With year-round sunshine and marina berths at tempting prices, Lanzarote is increasingly being seen as an alternative to the Mediterranean for those who like to keep their boat abroad.

As part of the Canary Islands chain, Lanzarote belongs to Spain and is within the EU. There's modern infrastructure, and English is widely spoken. The three main marinas are smart and efficiently run. Whether you're flying in from London, Bristol, Manchester, Bournemouth or one of the many other UK airports with direct flights to the island, it's just a short drive by hire car or taxi from Arrecife Airport to your boat.

ABOUT THE AUTHOR



Former PBO editor Sarah Norbury is now a contributing editor and a freelance writer on boats and travel. She enjoys yacht cruising in faraway places and sports-boat racing at home on the Solent. Follow her on twitter [@sailingsarah](https://twitter.com/sailingsarah)

On a visit earlier this year I found that some British owners, as you'd expect, were eventually heading across the Atlantic, stopping on Lanzarote to make use of the boatyards, chandlers and supermarkets. But many others, having sailed 600 miles from Gibraltar to get there, intended to keep their boats in Lanzarote for years to come, enjoying days out from the marina and longer cruises to the islands in the Canaries chain.

Three modern marinas

Puerto Calero was chosen as the starting base for the first RORC Transatlantic Race, and it's easy to see why. Its excellent yacht services are matched by upmarket surroundings – there's a designer shopping plaza, elegant restaurant and cultural events including

outdoor opera. But the 450-berth marina caters for all moods and pockets, and many crew were to be found in the friendly Irish pub and cosy bars, in one of which (the Casablanca) I bumped into PBO's roving columnist Andrew Simpson, preparing his boat for crossing to the Caribbean. Of all the bars in all the world...

There are around 40 resident British yachts at Calero, the number growing each year. Some owners also have a home on the island, but most travel to their boat for holidays and long weekends. The airport is just six miles away. Calero is home to Endeavour Sailing, run by Keith and Stephanie Charlton. They do a roaring trade in RYA training right up to Yachtmaster Ocean. 'People like the fact that they can learn to sail in the sun, but unlike in the Med successful candidates go home with a tidal certificate', said Keith.

From the press boat at the start of the RORC Transatlantic Race last winter I watched as the big racing yachts lined up off Puerto Calero in a light breeze (the marina is on the sheltered side of the island) against the photogenic backdrop of Lanzarote's volcanoes. It was a



The buildings in Marina Lanzarote are brand new

glorious day, the water blue and glistening, and there was a rainbow after an uncharacteristic shower. I imagined the boats at home laid up for winter and thought, the yacht owners here are onto something!

Marina Rubicon has more of a village, family feel with restaurants, shops and the yachty One Bar surrounding a large marina basin. Although it is on the southern end of the island, further from the airport (20 miles) and the capital, it's next door to the lively resort of Playa Blanca so it doesn't feel isolated. Rubicon's Saturday market attracts boatloads of visitors from hotels on the neighbouring island of Fuerteventura.

The marina was home to around 35 British boats last winter, many crews joining in with the year-round programme of holiday activities including dinghy racing, water aerobics and outdoor cinema. Some owners visit for long weekends in winter while others, mostly retired, stay all winter, living aboard. Another type of British boat owner at Rubicon is the young family that uses the boat for sunshine getaways throughout the year.

The full-service boatyard adjoining the marina was working on a number of very large yachts when I visited. The manager said that wealthy owners stay in the nearby five-star Princess Yaiza hotel while



The island's newest yacht haven, Marina Lanzarote, is in the capital Arrecife



Amazingly, grapes are grown for winemaking in the volcanic soil

the yard services the yacht's systems prior to an Atlantic crossing. Those on a tighter budget are also welcome at this friendly yard, said manager Cecelia Willems.

Marina Lanzarote is brand new, in the convenient and buzzing location of the capital city, Arrecife. This is the second marina to be built by the Calero family, who after the success of their first, Puerto Calero, realised that demand for berths on Lanzarote was growing and that Arrecife had deep water in its main harbour, with excellent access from the sea and superb shelter. The Caleros have added strikingly modern marina buildings, just a few minutes' walk from the city and its tapas bars, shops, restaurants and beach.

The adjoining boatyard offers services 'befitting the Atlantic's first port of call from Gibraltar', said Calero Marina's MD Jose Juan Calero. Boats of all sizes can be serviced there including wide, racing catamarans. For exploring off the beaten track, Marina Lanzarote is close to a northern archipelago of small islands which Mr Calero describes as 'pure nature with wild beaches – a new sailing frontier'.

Cruising Lanzarote

Many boats from the other large Canary islands head to Lanzarote in summer, seeking its gently shelving sandy bays, particularly on the Papagayo peninsula on the southern tip of the island where anchoring is easy and the water so clear you can see the sandy bottom.

Heading north, visiting one of the jewels of the Canaries, the tiny island of Graciosa, is much easier now that Marina Lanzarote is available as a stopover or start point in the north of Lanzarote. From here it's a day's sail to windward to reach Playa Francesca on Graciosa's south coast, a beautiful bay with good shelter from the prevailing north-easterly tradewinds.

Lobos (meaning 'wolf-seal') island, belonging to Fuerteventura, is a short sail from Lanzarote and not to be missed. Its beautiful, shallow-water anchorage with white sand and turquoise water could almost be in the Caribbean. It's a nature



A venture down into Cueva de los Verdes (the green cave)

reserve, and a walk ashore is recommended. There are more than 130 species of plant, and you might see rare birds like the houbara bustard and great grey shrike.

Lanzarote ashore

Though the landscape is barren compared to the more westerly Canary Islands, once you start to explore there is plenty to see and do, and car hire is inexpensive. For a close-up volcanic experience, take the tour of Timanfaya National Park which starts with a drive through extraordinary lava fields, then to holes in the ground that spew forth smoke and flames, ending with a barbeque lunch cooked over a volcano in a restaurant with views across peaks and craters towards the sea. Magnificent caves are open to the public: Cueva de los Verdes (the green cave) and Jameos del Agua, a fabulous cavern where you can eat, drink and experience a magical underground concert, are not to be missed.

There's a restaurant in the Castillo de San Jose Museum with views of Arrecife harbour, with a funky interior designed by the island's most famous artist, Cesar Manrique. Thanks to his zeal to preserve the island's natural beauty there are strict laws to prevent high-rise buildings and to use local materials and styles in new developments.

If you are tempted to try the Canaries but would like to see what you're getting before committing, why not try a charter holiday there – see the charter advertising section at the back of this issue – or book a cheap holiday to Lanzarote and visit the marinas by car.

■ **The second RORC Transatlantic Race starts from Marina Lanzarote on 28 November 2015.**
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Free anchorage!

Charlestown, Cornwall



Charlestown's private harbour is a good place to spot tall ships

Situated in the north-west of St Austell Bay, Charlestown used to be a clay port and is an interesting place to visit.

The historic private harbour is owned by Square Sail, a company that makes period films, so it can be a good place to spot tall ships. The wide expanse in front and south of Charlestown can be used as an anchorage, but only in westerlies or calm conditions. Stay at least 200m from the shore to get enough depth and to avoid drying rocks at the south end of Porthpean's beaches and off the beach below the Ropehaven cliffs.

The outer basin has plenty of steps to use if you arrive by dinghy. Time your stay to ensure enough depth (drying 1.2m in sections). The approach dries and the entrance to the outer basin is very narrow: the inner basin can be entered at HW +/-2.

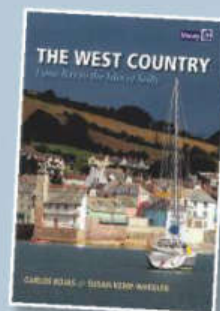
Imray's book *The*



West Country: Lyme Bay to the Isles of Scilly by Carlos Rojas and Susan Kemp-Wheeler warns sailors only to attempt day entry, and only after having made arrangements with the harbour master (Tel: 01276 70241, VHF 14/16). The entrance gate is 15m wide and there are dangers immediately to either side. Pick up the buoy

300m south of the harbour if waiting for the tide or for the harbour master to open the lock to the inner basin.

Charlestown has several places to eat and drink, and the larger town of St Austell is about a mile away.



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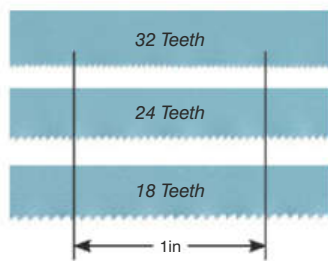


Hacked off

A hacksaw isn't just for the metalwork shop – it's essential for any boat toolkit, as Julian Peckham explains

A hacksaw is a versatile tool to have aboard a boat. It'll cut metals of all types, cuts plastics with ease, and can be used to saw through corroded hose clips or even reinforced rubber hoses that have welded themselves to couplings. And they're not expensive – you can buy a perfectly good new hacksaw for under a fiver.

Trying to saw through anything with a blunt hacksaw blade is hard work, so the first rule to successful



hacksawing is to use a sharp blade. They're fairly cheap at around £1 each if you buy in bulk, so if your blade's teeth have lost their edge, or the blade has



When using a hacksaw, push firmly and use the whole length of the blade

missing teeth or cracks in it, replace it.

Standard hacksaw blades are mostly available in three different pitches, or numbers of teeth per inch (TPI). The number of teeth you need will depend on what you're cutting:

■ 32 TPI for soft metals such as

copper, brass and aluminium, and for precision cutting of sheet metals including stainless steel.

■ 24 TPI for cutting heavier steel such as angle iron and heavy pipe.

■ 18 TPI for steel rod and cast iron.

Generally speaking, the finer the pitch the more accurate and clean the cut will be – but it'll take longer.

GETTING THE BEST FROM YOUR HACKSAW

Setting up the hacksaw

Hacksaw blades can be set up in the saw frame to cut on either the push or pull stroke, depending on circumstances. For most normal uses they're set forwards to cut on the push stroke. The blade needs to be set in tension in the frame to work properly. Some saws come with a wing nut adjustment, others



with a lever-type cam: if yours has a wing nut do it up until it feels tight, then do it up some more until the frame starts to bend slightly. Cam adjusters will pretty much set up the tension for you.

A blade that twists or kinks during sawing creates a lot of friction, not only wasting your energy but also making it hard to maintain an accurate cut, so make sure it's under a good tension.

Get started: using the hacksaw



Make sure that whatever you're sawing is held firmly in a vice or clamped tightly to a workbench: the closer you can make your cut to the vice or clamp the less the piece will vibrate and the easier it will be to cut. It'll be quieter too!



Making the initial cut, particularly on tubing, can be tricky as the saw blade can have a tendency to skip and slide about until it has a firm bite – this is especially the case with stainless steel, which can be a devil to get started. A layer or two of masking tape can help prevent slipping and sliding.



Don't push so hard that you bend the blade or encounter a lot of resistance. With the teeth facing forwards, they'll only be cutting on the forward stroke so there's no need to keep pressure on during the backstroke. As with any type of sawing, let the blade do the work. Use both hands fore and aft on the saw, move your body rather than just your arms, and try to keep a constant, easy pace so you don't get too tired too quickly.



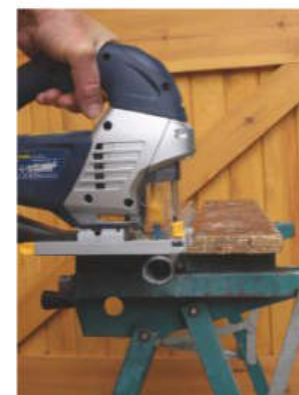
Lubricating the blade with a light machine oil (even baby oil will do) or something like WD40 will help stop the teeth clogging.



A junior hacksaw is ideal for sawing where space is restricted, or where you need to be careful on a delicate job.

Cutting metal with a jigsaw

A jigsaw with a fine-toothed metal-cutting blade is great for things like tubing – it's often easier to get a true, clean cut than it is using an ordinary hacksaw. Set the speed to slow, ensure the piece being sawed is held securely with no chance of any movement, lubricate the blade and proceed carefully, letting the blade do the work.





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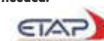


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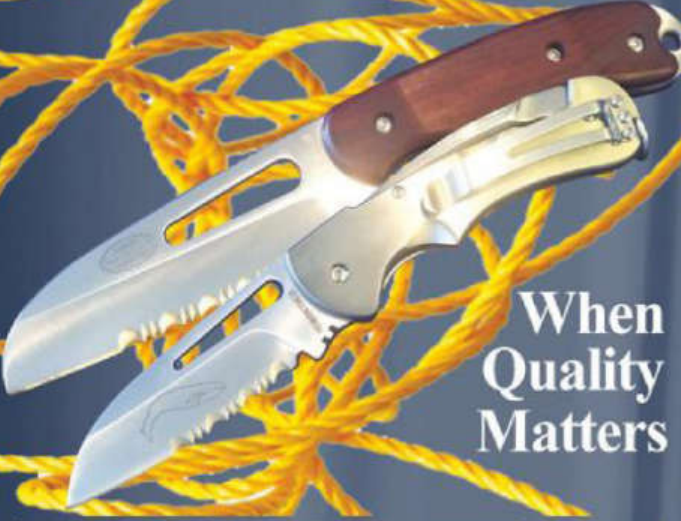
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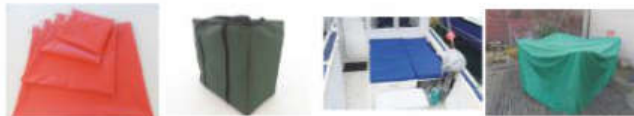
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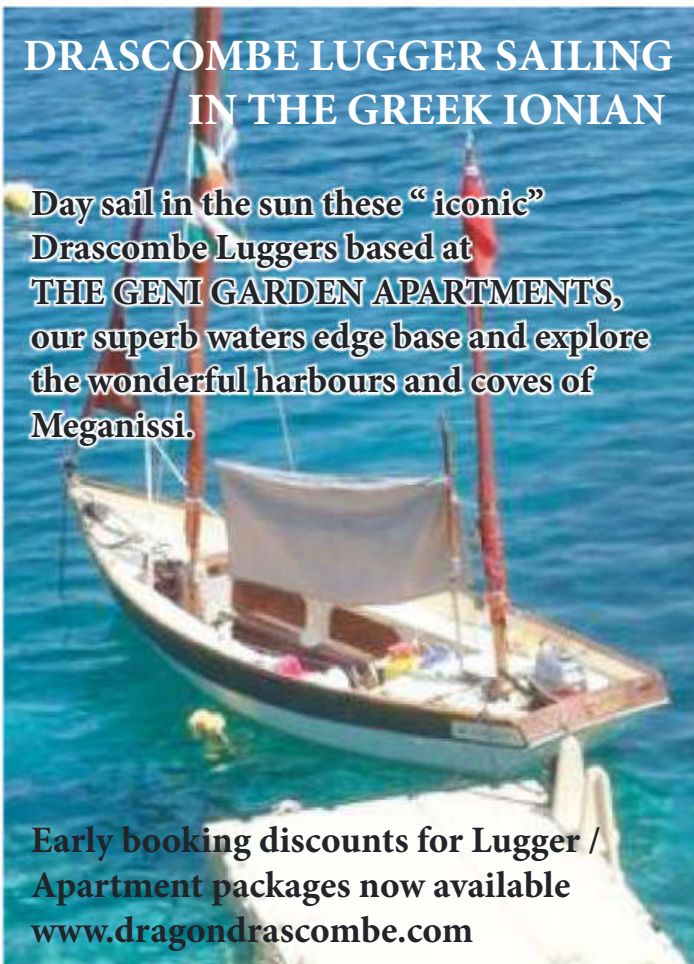
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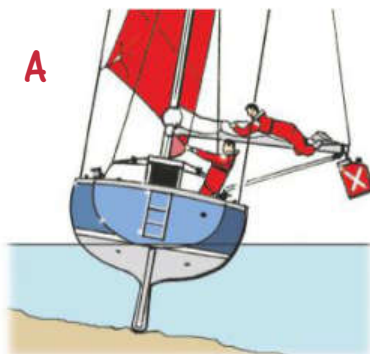
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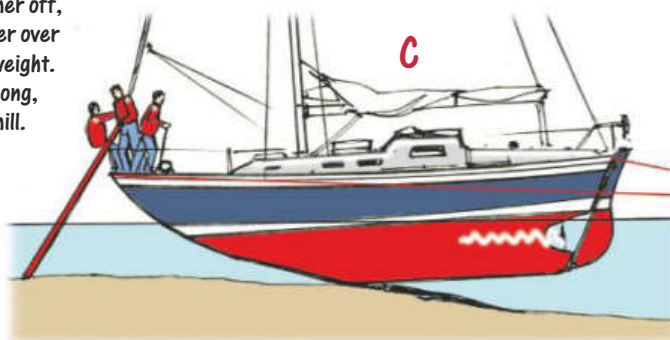
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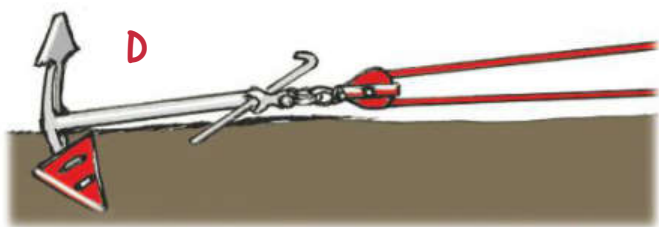
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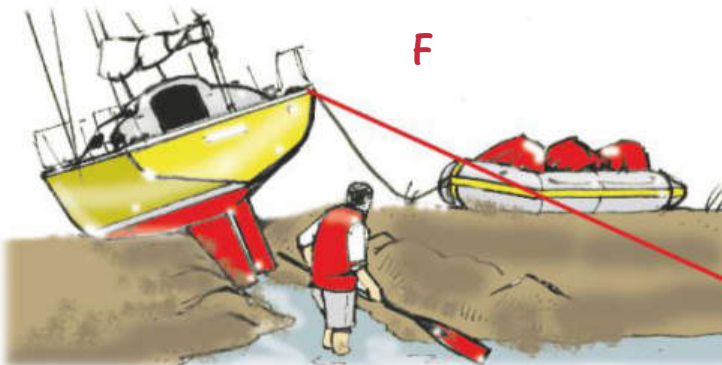
A. If a quick manoeuvre doesn't spin her off, try reducing the draught by heeling her over with a backed sail and shifting some weight.



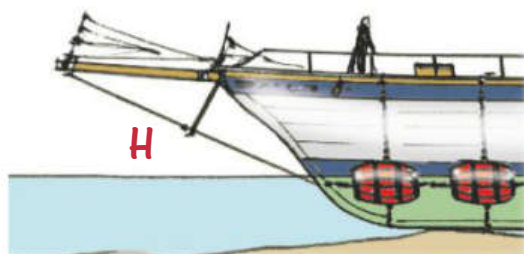
C. Feel around to get an idea of the shape of the bottom. Try wriggling her off by shifting weight fore-and-aft to reduce the draught, and by hauling in on the kedge anchor cable, led back to a sheet winch or capstan. Shoving with the pole and running the engine can also help unstick her. **D.** If your kedge anchor is small, use the main bower anchor. In a salvage situation, mud shoes have been added to increase the size of the flukes, and a very strong block added into the system can nearly double the pulling power of the winch. It's also wise to keep the coastguard apprised of your situation.



E. If she's stuck, heel her uphill before the water recedes; and if needed, pad the hull to prevent damage. Lash bunk cushions and boards underneath her to stop them floating out. **F.** It's sometimes possible to get off earlier by shifting weight into the tender, digging a channel for the keel and hauling in on the kedge.



G. One reader saved his small boat by digging a hole for the keel, and then jacked her up into it.



H. In the past all sorts of buoyancy devices, ranging from barrels to other boats, have been used to lift vessels off the bottom.



I. Extreme caution is needed when accepting help. With a strong rig she could be heeled and then twisted clear with a bow line – but it isn't easy, could damage the boat and might incur a hefty salvage claim.

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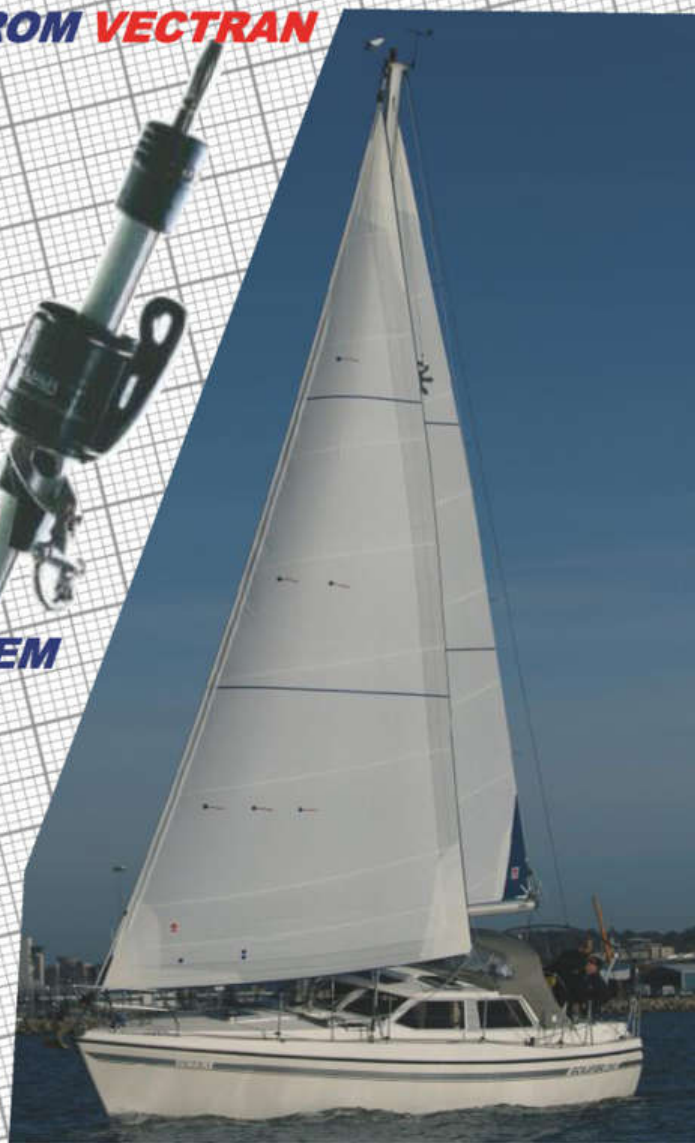
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